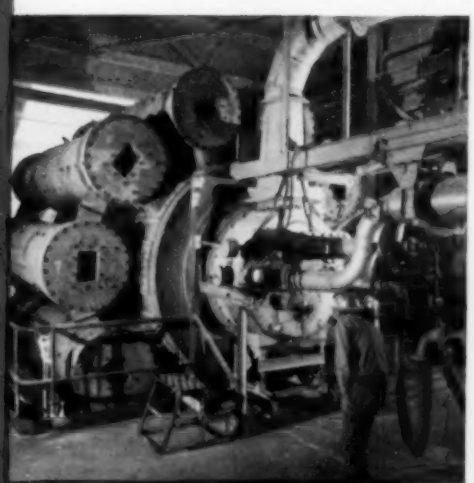
AUGUST 1958

Brick & Clay Record

LEADING CLAY JOURNAL OF THE WORLD

BRICK • REFRACTORIES • STRUCTURAL TILE • SEWER PIPE • DRAIN TILE • TERRA COTTA • ROOFING TILE • CLAY AGGREGATE



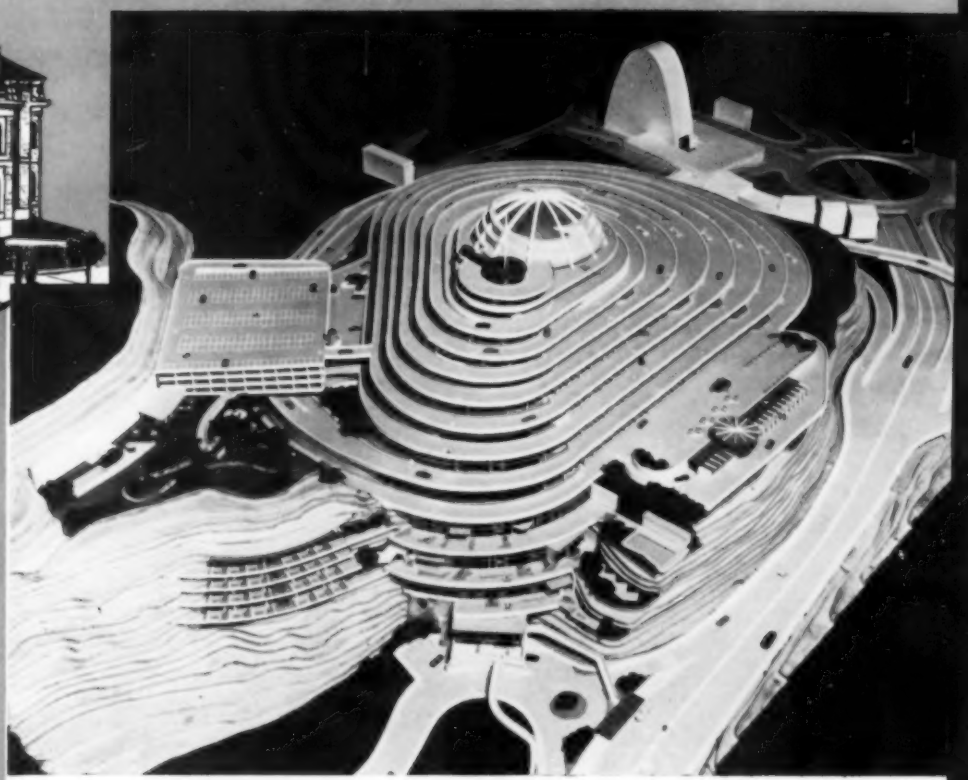
KAISER REFRACTORIES OPERATION

An overall picture of Kaiser's operation which began 15 years ago, is still expanding, growing.

Page 49

Overlooking Caracas, Venezuela, this "spiral in space" will be ready for use in 1960; built at an estimated cost of $25,000,000. It is 10 stories high on one side, 25 on the other—covers 25 acres of mountainside. It will include 320 stores, hotel, swimming pool, children's park, 7 theaters, business offices, garages, its own closed TV circuit and in the dome, a Great Hall for International Trade Fairs. Architect Sr. Jorge Romero Gutierrez makes skillful use of clay products in his dazzling white "Halicoid."

PHOTO COURTESY HAMILTON WRIGHT



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to assure....PRODUCTS

that insure..PROFITS

From brick for leading buildings many decades ago (produced in the very first Bonnot extrud . . . to clay units for the super-modern "flying saucer" business center in South America . . . Bonn engineering paces the industry with processing equipment that provides products to meet the m exacting specifications of their time.

Such "specifications" include precision brick and tile. But more importantly, right now, th must be machine room performance that safeguards profits by assuring *"maximum producti at minimum cost."*

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THIS TRADEMARK

IS YOUR *Assurance* OF THE FINEST REFRACTORIES AVAILABLE

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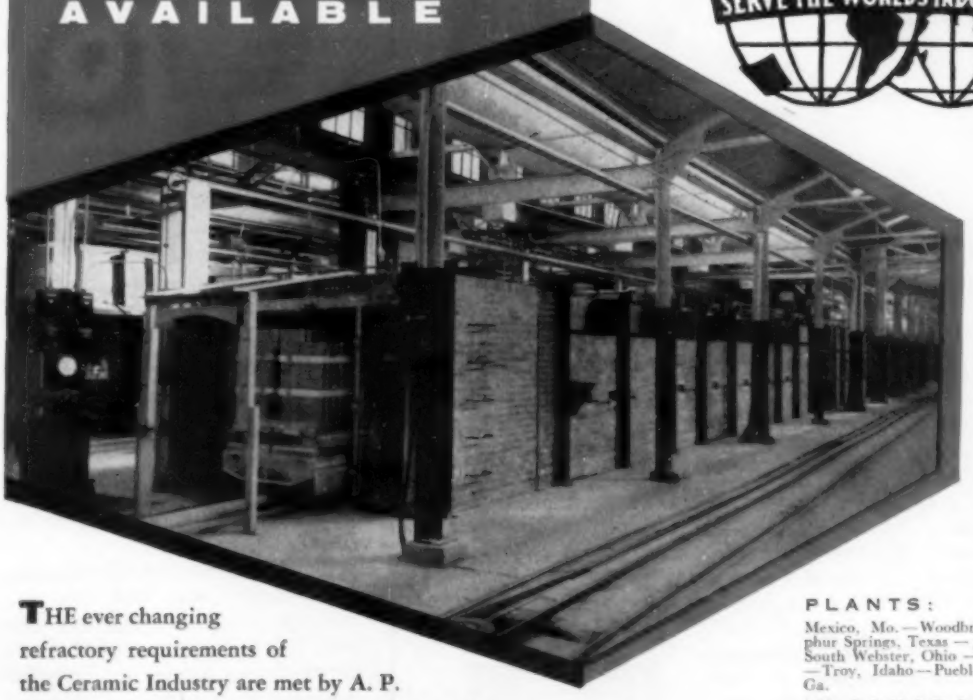

THE ever changing refractory requirements of the Ceramic Industry are met by A. P. Green, through a constant program of research and product development. From the mining of the highest quality fire clays to the finished product . . . A. P. Green refractories are quality controlled every step of the way.

A. P. Green plants, sales offices, and distributors are strategically located to provide a complete line of quality products, engineering service to help solve your individual refractory problems, and prompt delivery.

Make sure your plant is enjoying the advantages of the latest developments in refractories. Rely on A. P. Green . . . always, the best refractories for the job . . . at the lowest cost.

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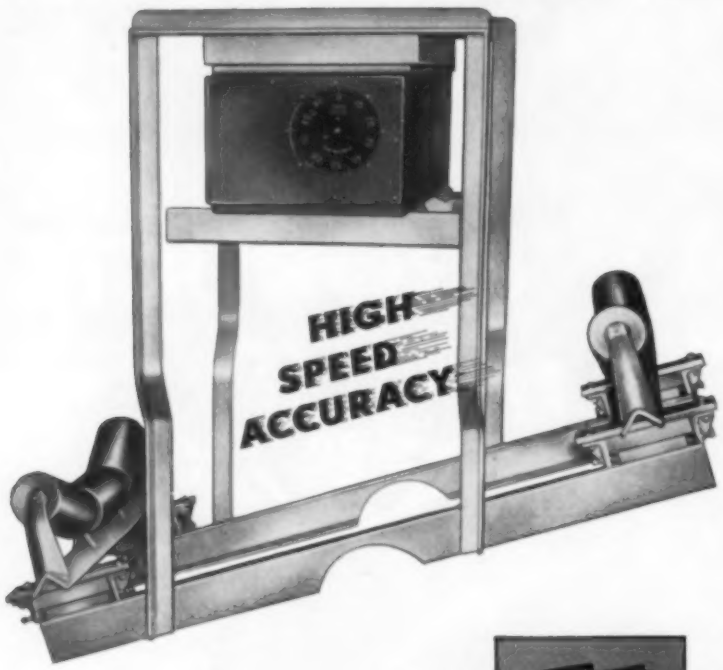
A. P. GREEN FIRE BRICK COMPANY
MEXICO, MISSOURI, U. S. A.

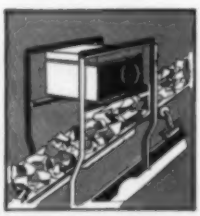
MANUFACTURERS OF HIGH GRADE FIRE-CLAY REFRACTORIES

"Brick & Clay Record" is published monthly by Industrial Publications, Inc., 5 S. Wabash, Chicago 3, Ill. Subscription price: U. S. A. and Canada, $5.00 per year; three years, $10.00; Foreign subscription price: $7.00 per year; three years, $15.00. Vol. 133, No. 2. Entered as Second Class Matter January 2, 1911, at the Post Office at Chicago, Ill., under the Act of March 3, 1879. Additional entry at Pontiac, Ill.

NEW Thayer Inventory Scale

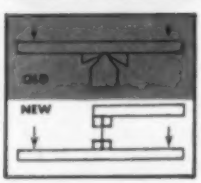


Totalizes continuously and accurately any material being conveyed on an endless belt. Newly designed Thayer Scale fits over level or inclined systems at any location for direct or remote reading. Thayer Scales of 100 lbs. or 300 tons per hour capacity are available.



Recalibrates linearly with direct setting by just placing a known weight on the scale platform. The belt is not disturbed. No chains or involved calculations are necessary. Setting is positive, accurate, and long lasting.

Exclusive Thayer Plate Leverage System is guaranteed accurate for the life of the scale. There are no knife-edge pivots to wear down. Neither dust nor dirt nor vibration can affect its high accuracy. Thayer Scales are unsurpassed for simplicity and reliability under rugged conditions.



Write us about your bulk weighing problems for inventory or batching purposes.

THE Thayer SCALE

*THE THAYER SYSTEM OF PROCESS CONTROL BY WEIGHT

AUTOWEIGHTION

THAYER SCALE CORP., 12 Thayer Park, Pembroke, Mass.

LETTERS To the Editor

Graham, Not Welfer

Editor, BRICK & CLAY RECORD—
I have just read with usual interest your June issue . . . On page 81 I note that in connection with the picture of the writer, you have indicated that the chap on my left is Tom Welfer, whereas this is actually Harry Graham, vice president in charge of sales at General Refractories Co.

For the past several years I have made it a practice to collect pictures of this type and would appreciate your lending me the negative of the picture in question so that I may have an enlargement made up.

W. H. Peterson
Valentine Frie Brick Co.
Woodbridge, N. J.

Ed. Note: Thanks to Peterson for the correction, and with the thanks go the negative desired.

All Over Indiana

Editor, BRICK & CLAY RECORD—
Read with interest and some amazement the June issue of Indiana. The amazement stems from noting the travel involved to assemble the issue.

May we suggest a one-stop trip to Sunny California, and include many of the features found throughout Indiana?

Since 1954, we have installed two new periodics with stack fan . . . built new shop . . . installed complete fork handling . . . installed new electric heated screens . . . installed automatic dry pan feed . . . installed Meco stack booster . . . installed plant designed belt corner, and under belt MT car feeding, installed flush

Continued on page 69

We Were Flooded!

Floods in north central Illinois in mid-July caught our printer right in the middle of printing the July issue of B&CR. Some 30 inches of water covered the main floor of the shop.

This is the reason your July issue came 5 or 6 days late. We're sorry about this, but obviously neither B&CR or our printer could have any control over such a thing.

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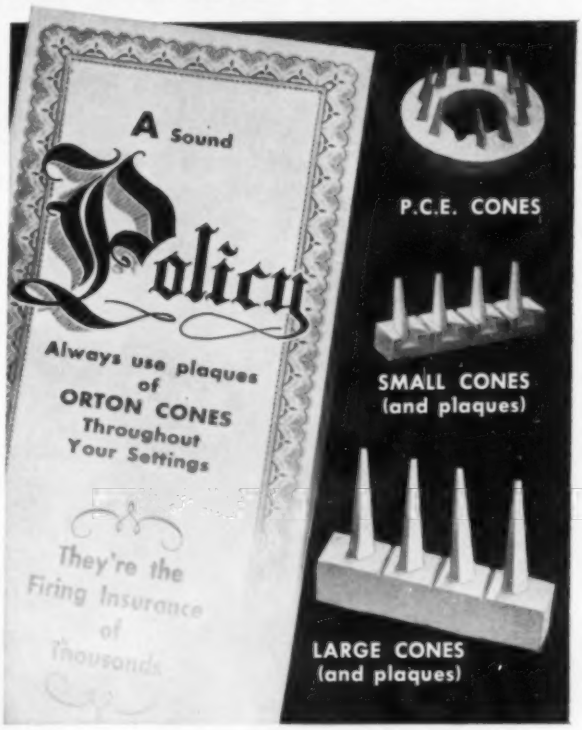
BRICK & CLAY RECORD
5 South Wabash Chicago 3, Ill.

A SOUND POLICY—

A Sound
Policy
Always use plaques of ORTON CONES Throughout Your Settings
They're the Firing Insurance of Thousands
P.C.E. CONES
SMALL CONES (and plaques)
LARGE CONES (and plaques)

rely on **ORTON** *for all pyrometric cone needs—*

The large cone series is made in Cone Numbers 022 to 42, inclusive (except Nos. 21, 22, 24 and 25, but including Nos. 31½ and 32½). The small cone series is made in Cone numbers from 022 to 12, inclusive.

An iron-free series of large cones in Nos. 010 to 3, inclusive, is available for those firings having somewhat reducing conditions.

The P.C.E. cone series is available in cone numbers 12 to 42 inclusive, except Nos. 21, 22, 24, 25, but including Nos. 31½ and 32½.

Plaques for both large and small cones are made in compositions suitable for the range Cone 022 to 12, and the range Cones 13 to 36. Plaques for P.C.E. cones are not available, since requirements vary widely from laboratory to laboratory.

When ordering, please specify quantity (number of boxes or cones) in each cone number in each type of cone required.

Foreign Sales Agent: **International Division, The Ferro Corporation, 4150 East 56th Street, Cleveland, Ohio, or the Foundation**

the firing insurance of thousands

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When you need

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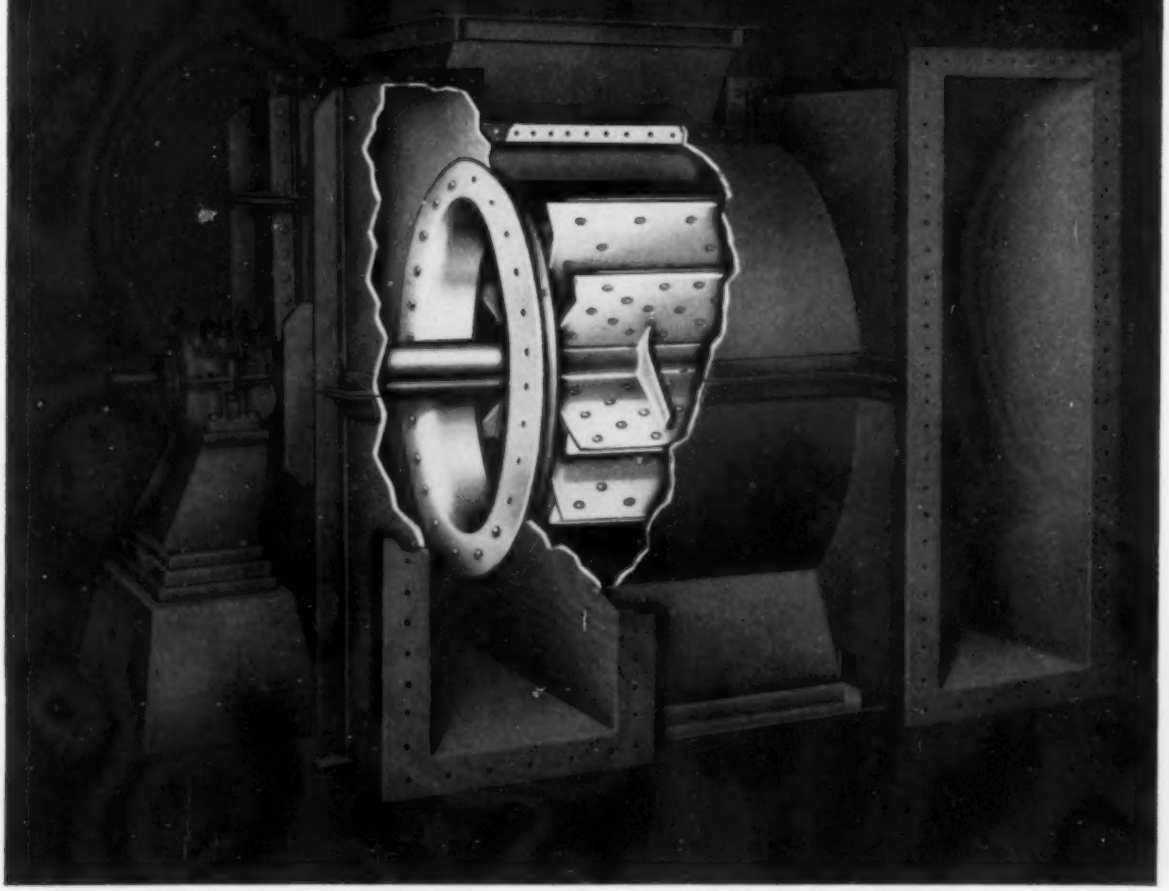


Use Westinghouse erosion-resisting fans:

Designed specifically to handle abrasive gases at elevated temperatures and high pressures!

Superior Wheel Design:

Open wheel (no side plates) with radial tapered blades provides low stress and long rotor life.

Erosion Resistance:

- Ribbed blade liners for severe abrasive service.
- Flat blade liners to prevent material build-up.
- Flat housing and scroll liners.

All liners easily replaceable in the field.

More Information?

Call your nearest Sturtevant Division Sales Engineer, or write Westinghouse Electric Corporation, Department H-22, Hyde Park, Boston 36, Mass.

J-80644

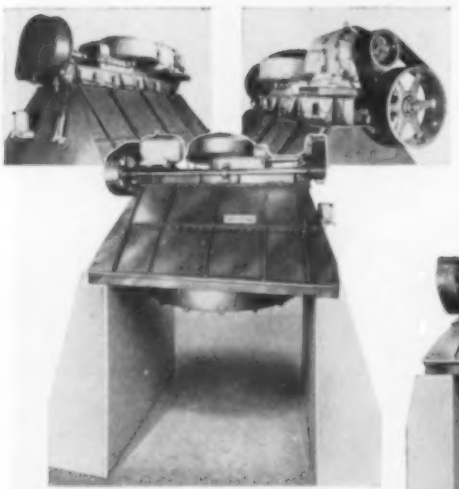
YOU CAN BE SURE...IF IT'S Westinghouse

LOOKED AT FROM ANY ANGLE, MORE THAN YOUR MONEY'S WORTH

THE FAMOUS CHAMBERS SUSPENDED DESIGN

Air-Pressure Control

9' or 10' DRY PAN, No. 70 RIM DISCHARGE GRINDER

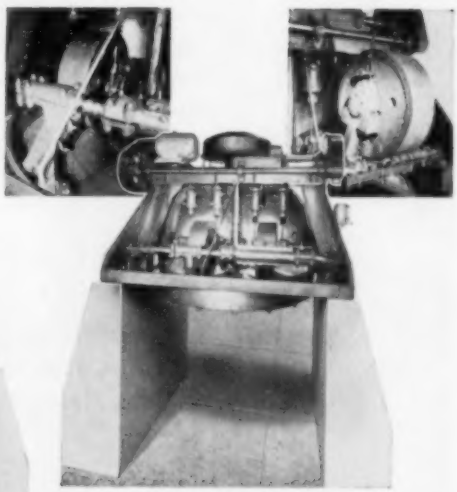


(Left) Surrounding dust-tight enclosure isolates all components of drive from grinding areas, provides convenient attachment to centralized dust-collecting systems.

(Left inset) Dual grease lubrication pumps and distribution valves simplify daily maintenance and insure against premature parts failures. Dust-tight covers completely protect hardened, cut-steel double-gear reduction (20:1).

(Right inset) The completely self-contained 60 to 75 HP drive makes separate foundations and long V-belts unnecessary. High starting torque motors eliminate clutches and subsequent maintenance costs.

(Center) Absence of lower step bearing makes practical direct hoppering to conveyor or bucket elevator. Conventional scrapers and bottom boards reduce over-all installation height, providing same efficiency discharge. Simple foundation piers are money and space-savers.



(Right) The essentials of maximum production from muller-type grinding machines lie in the proper relationship of grinding pressures, depth of material used in pan, and large discharge areas. Unique balance and control available to the operator can only be achieved through the Chambers air-pressure control —2 air cylinders per muller—automatic feed control to the pan, and extra-large screen area (39 Sq. Ft. for 9' pan, 51 Sq. Ft. for 10' pan).

(Left inset) Easily adjustable plow can minimize tire cupping. Dust-tight protective boots and connection with automatic lubrication system keep maintenance costs insignificant. Photo illustrates ¾" steel replaceable curb liners.

(Right inset) Ease of maintenance dramatically illustrated by the rocking action of muller assembly to remove it from pan area. Separate bearing housings (either bronze or anti-friction) make a quick-change assembly a cost-saving reality.

GRINDING PRESSURE RANGE

with Chambers Air-Pressure Control

Air Pressure in Cylinder	75 lbs.	100 lbs.	125 lbs.	150 lbs.	175 lbs.
Total Crushing Pressure on Muller	*11,900 lbs.	*14,000 lbs.	*16,000 lbs.	*18,100 lbs.	*20,100 lbs.

*Effective dead weight of muller assembly is 5,880 lbs.

Write today for further information, without obligation.

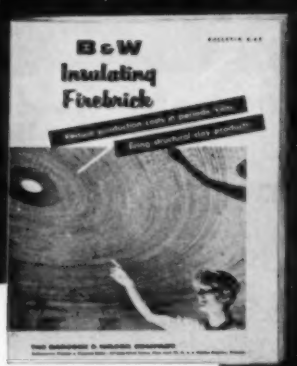
SERVING YOUR INDUSTRY FOR OVER 100 YEARS

CHAMBERS BROTHERS CO. 1857 1958

52nd & Media Streets • PHILADELPHIA 31, PA.

Why B&W Insulating Firebrick in Periodic Kilns ?

- Lightest Weight
- Lowest Thermal Conductivity
- High Fuel Savings
- Faster Cycling
- Uniform Temperatures
- Simplified Construction



Since B&W IFB are lighter than other insulating firebrick, they insulate better. Thus, they save more fuel.

The lighter weight of B&W Insulating Firebrick provides low thermal conductivity and lower heat storage. As a result, the kilns heat and cool more quickly, thereby appreciably increasing production. B&W IFB also aid in reducing rejects by maintaining uniform temperatures within the kiln.

B&W IFB are further suited for use in periodic kilns because their light weight, high hot-load strength and negligible shrinkage permit thinner, less costly wall constructions. In addition, B&W IFB are easier to shape and handle . . . make construction and maintenance simpler.

For information on how lightweight B&W Insulating Firebrick can increase production and cut costs in your kilns, consult your local B&W Refractories Representative or write for Bulletin R-43.

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GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N.Y.
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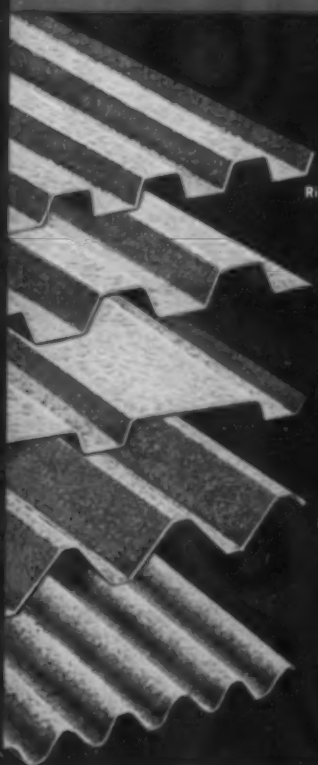
B&W Insulating Firebrick • B&W Refractory Castables, Plastics and Mortars • B&W Silicon Carbide • B&W Ramming Mixes • B&W Kaowool

Freeport Brick Co. Plant, Freeport, Pennsylvania. Dimensions: 640'x 100'x 22'.
Architects, Engineers and General Contractor: Freeport Brick Co.

Sub-Contractor for Roofing and Siding: Callery Industries, Inc.
130 Hillvue Lane, Pittsburgh 37, Pennsylvania.



A KAISER ALUMINUM ROOFING & SIDING SHEET TO SUIT YOUR NEEDS

Ribbed Siding

Thickness: 0.032" and 0.040"
Length: 5' to 22' in 6" increments and 22'-5"
Width: 41⅛" overall
Rib Configuration: 1" deep — 4" and 8" pitch
Finish: Stucco Embossed

Also available with rib configuration 1½" deep — 5.33" pitch. Sheet thickness 0.032". Lengths 5' to 12' in 6" increments. Other specifications on request.

V-Beam Roofing & Siding

Thickness: 0.040" and 0.051"
Length: 5' to 22' in 6" increments and 22'-5"
Width: 41¼" overall
V-Configuration: 1⅛" deep — 4⅞" pitch
Finish: Stucco Embossed

Industrial Corrugated Roofing & Siding

Thickness: 0.024" and 0.032"
Length: 5' to 12' in 6" increments
Siding Width: 33⅛" and 47⅛" overall
Roofing Width: 35" and 48⅛" overall
Corrugation: ⅞" deep — 2.67" pitch
Finish: Plain Mill and Stucco Embossed

Flat Sheet Roofing & Siding

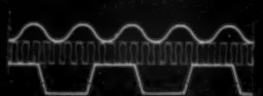
Thickness: 0.024" and 0.032"
Finish: Plain Mill and Stucco Embossed

Full specifications on request.

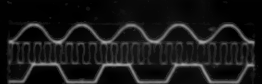
NOTE: Kaiser Aluminum also offers a complete selection of flashing sheet, formed flashing, closures and other accessory building items.

NEW! INSULATED ALUMINUM "SANDWICH" WALLS

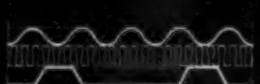
Choose From These and Other Sandwich Combinations



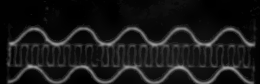
Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Ribbed Siding—5.33" pitch



Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Ribbed Siding — 4" pitch



Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Ribbed Siding — 8" pitch



Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Industrial Corrugated Siding

LONGEST LIFE LOW INITIAL COST!

Freeport Brick Company—one of today's foremost manufacturers of ladle brick—chooses corrosion-resistant Kaiser Aluminum roofing and siding for their new 64,000 square foot brick plant

The Pittsburgh area's corrosive climate can be murder on many building materials — and the Freeport Brick Company knew it.

So, before starting work on their new brick plant in Freeport, Pennsylvania, company president Francis H. Laube made an intensive study of all available materials — including aluminum and specially treated steel.

His purpose: to determine just which would best combine the benefit of minimum long range maintenance with low *initial* cost.

Result? Freeport specified corrosion-resistant sheets of Kaiser Aluminum—and is now looking forward to many years of economical service.

And Freeport got a bonus. Kaiser Aluminum's light weight — plus special design features — made big *installation* savings possible, too!

For example, sub-contractor David Starr of Callery Industries, Inc., a Kaiser Aluminum franchised applicator-erector, has this to say about their roofing work:

"**We were very pleased** with the way lightweight Kaiser Aluminum 48" corrugated sheets handled. Because of their extra width, fewer sheets were needed and there was considerably less waste from lapping. In fact, the entire 64,000 square feet were covered in only 15 days.

"For our money, nothing beats the benefits of Kaiser Aluminum industrial building products."

Attractive combinations of brick and functional Kaiser Aluminum box ribbed siding were employed for three walls of the plant. The fourth was hung exclusively in aluminum to allow for easy future expansion.

Kaiser Aluminum produces a full line of building products ideally suited for the brick and clay industry.

Weighing two-thirds less than similar steel materials, they speed construction and reduce the need for heavy, expensive supporting structurals. Their unique combination of strength and corrosion resistance promises a lifetime of handsome service with little necessity for painting or other care. And their distinctive embossing adds to the appearance of the building plus giving greater glare diffusion.

For A.I.A. File and full information, contact the Kaiser Aluminum sales office listed in your telephone directory. Or write Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office,* Palmolive Bldg., Chicago 11, Ill.; *Executive Office,* Kaiser Bldg., Oakland 12, Calif.

KAISER ALUMINUM

THE BRIGHT STAR OF METALS

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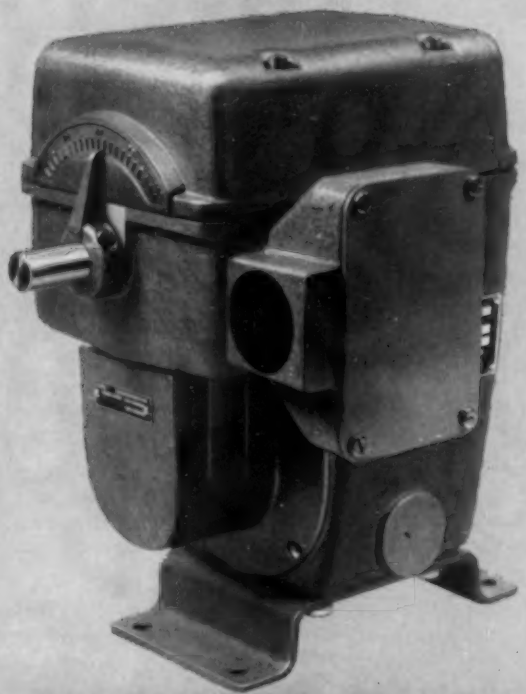
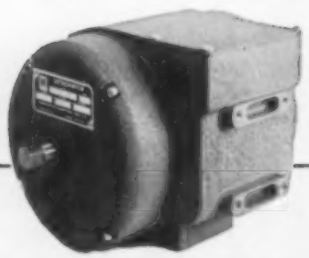
has the power you need for high accuracy in many electric control applications



New INDUSTRIAL VALVE MOTOR SERIES 831E



The **ACTIONATOR*** gives dependable, low-cost service where the application calls for medium power.

Operate valves, dampers, louvers and other final control elements with this rugged, lightweight industrial motor. It's available with on-off, two-position, floating or proportional control. Its features include:

- **High torque ratings**—to 200 inch-pounds.
- **Fast speeds** available to meet application requirements.
- **Internal brake** to hold load in any position without coasting or hunting.
- **Easy adjustments**—readily accessible, field adjustable, cam-operated travel and auxiliary switches.

For details, write for Specification S-804-3, or call your nearby Honeywell field engineer.

**Tradename Minneapolis-Honeywell Regulator Co.*

Designed primarily for valve or damper applications, Honeywell's powerful new Industrial Valve Motor is suitable for many other control applications where high accuracy and reproducibility are required. It rounds out the complete line of Honeywell pneumatic and electric industrial motors.

Some of its outstanding features:

- Positive control action without coasting.
- Accurate positioning of final control elements over full drive shaft rotation.
- Over-travel protection for the slidewire.
- Arc-suppression circuit to protect auxiliary relays.
- Readily accessible internal components.
- Variety of speeds (3 to 120 seconds) and modes of control available.
- Rated output torque—up to 62.5 ft. lbs.

For complete details on the new Series 831E Industrial Motor, write for Specification S-804-2, or call your nearby Honeywell field engineer. MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

H HONEYWELL *First in Controls*

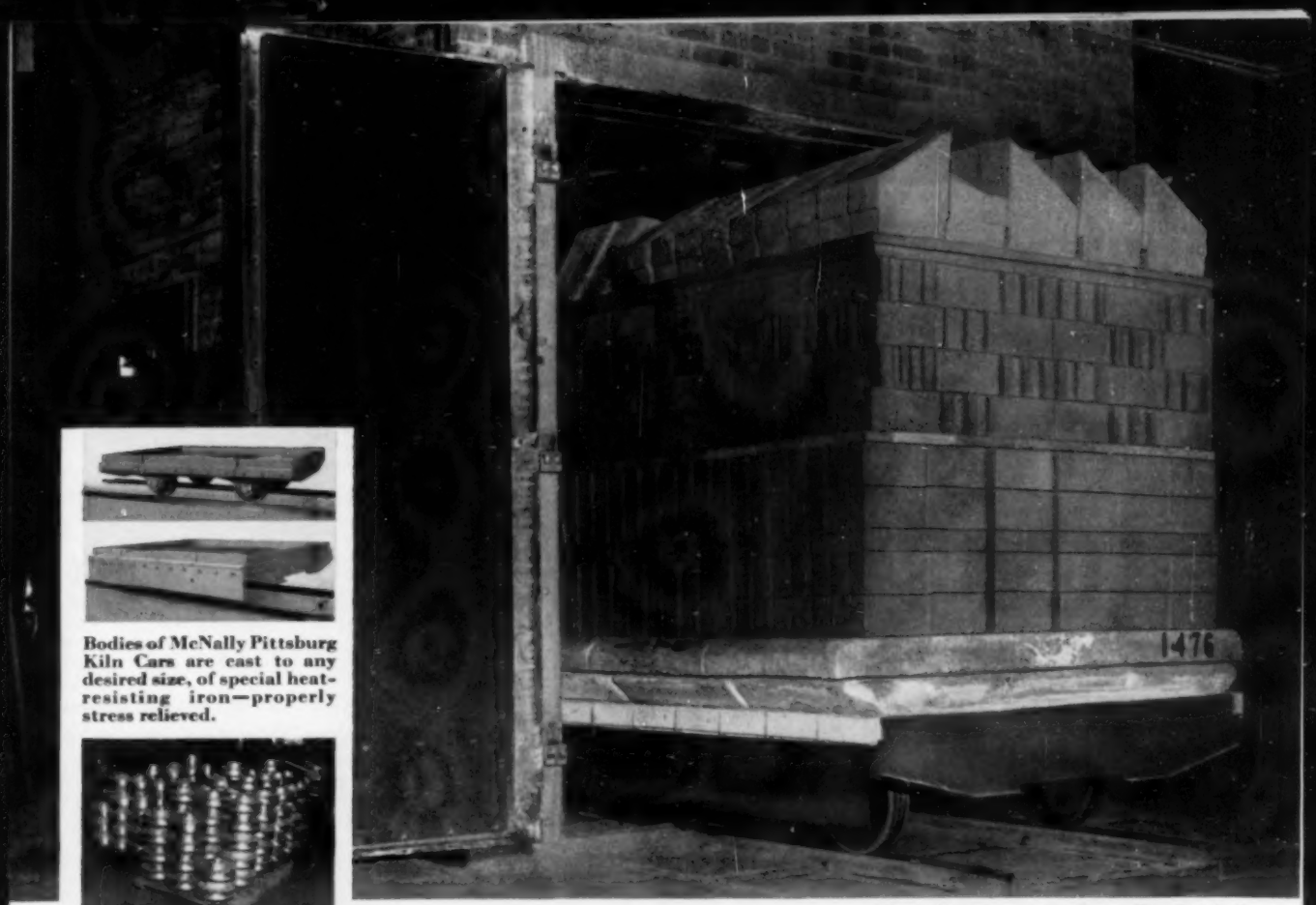
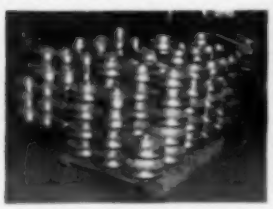


Photo Courtesy A. P. Green Fire Brick Co.

Bodies of McNally Pittsburg Kiln Cars are cast to any desired size, of special heat-resisting iron—properly stress relieved.



MacAlloy wheels, double-flanged one side, straight-faced other side—keep cars on track.

No lubricant needed on these cold-rolled steel axles—easily cleaned by compressed air.

What makes these Kiln Cars Stay in Service So Much Longer?

Here's where years of experience in designing and building equipment for the basic industries can HELP YOU CUT COSTS. Here are kiln cars engineered of special heat-resistant iron normalized by proper stress relieving—for longer life—fewer costly work stoppages.

Built to your specifications, McNally Pittsburg Kiln Cars feature exclusive MacAlloy iron—stress relieved—special bearings protected for long service. Investigate these engineered kiln cars. Mail coupon.

"Ask the men who know"—McNally Pittsburg Manufacturing Corp.

Other McNally Equipment

- Bevel crown gears
- Bevel crown gear pinions
- Muller wheels
- Muller tires
- Muller track plates
- Muller shafts
- Manual clutches
- Plow holders
- Swivel plates for plows
- Screen arms
- Screen plates (round and slotted holes)
- Screen plows
- All types of sleeves and bushings for dry pans
- Kilns
- Damper rings
- Damper ring covers
- Pug Mills
- Pug Mill shells
- Pug Mill shafts
- Pug Mill knives
- Pug Mill dies
- Drain tile dies
- Bushings for tile presses
- Brick machine dies
- Feeders
- Brick transfer car wheels and axles
- Conveyors, belt, scraper, apron
- Pinions, gears, sprockets, shafts, axles, and other parts to your specifications

GET THIS FREE BROCHURE AND SPECIAL INFORMATION

McNally Pittsburg Mfg. Corp., Dept. B
Pittsburg, Kansas

Please send information and illustrated folder on McNally Pittsburg Kiln Cars.

☐ Information on other listed items:_____

Name_____ Title_____

Company_____

City and State_____

MATERIALS
EQUIPMENT
SERVICES

GLAZING—Pemco reports that their ceramic glazing method helps in longer kiln life and lower fuel costs. Reduction of flame temperature needed lengthens the life of kiln refractories, lowers fuel costs, increases kiln capacity in pipe manufacture. Pemco Corp., Baltimore 24, Md.
401/Circle on Reader's Service Coupon

FAST CONSTRUCTION—Is possible with lower cost Swiss-Lok tubular building frames. Tubular members are said to save 1/3 steel weight without loss of strength; reduced crane service is possible; no welding, cutting, bolting or riveting at the site. Swiss Fabricating Co., Pittsburgh 2, Pa.
402/Circle on Reader's Service Coupon

SCREW CONVEYOR—Drive made by Dodge is entirely new and different, company says. Complete package drive includes high-efficiency reducer, quick-removable driving shaft, external packing gland. Dodge Mfg. Co., Mishawka, Ind.
403/Circle on Reader's Service Coupon

OCTOPUS—The Pearne & Lacy Octopus has been specifically designed to allow for completely automatic operation in the handling and finishing of large sewer pipe. The automatic operating cycle finishes both the spigot and bell ends, turns the pipe over, places it on the pallet boards. Pearne & Lacy Machine Co., Los Angeles 54, Calif.
404/Circle on Reader's Service Coupon

SUPERMATIC—Features of this masonry saw include heavy duty cutting head powered by 2 HP GE motor; cutting head that can raise or lower from 0" to 17" without turning off the motor; cutting at any height with no adjustment to make. Clipper Mfg. Co., Kansas City 8, Mo.
405/Circle on Reader's Service Coupon

PIPE JOINTS—A 2-pass Lanly conveyorized oven cures plastisol joints on vitrified pipe. Plastic material is applied to preheated pipe after it leaves the first pass of the oven and is cured in the second pass. Lanly Co., Cleveland 15, Ohio.
406/Circle on Reader's Service Coupon

STEP BEARING—Trouble can slow down production. Toronto thrust bearings can cure the trouble and will fit any pan or grinder. Types include standard step bearing, self-aligning roller, and double-bearing toe. Toronto Foundry & Machine Co., Toronto, Ohio.
407/Circle on Reader's Service Coupon

CAR TOP TILE—Broken tile can be repaired with new Super 3000, press together, let mortar set, and the tile are ready for use again, at a cost of 2-¾c for the repair job. Refractory & Insulation Corp., New York City 5.
408/Circle on Reader's Service Coupon

TURBINE-MIXER—Test records in the refractory industry show that the Smith Turbine-type Mixer can give 400% faster performance. Mixing time averaged over four times faster on a variety of mixes; gave more uniform blending; faster means of coating; no excessive breakdown of particle size; balling tendencies were reduced. T. L. Smith Co., Milwaukee, Wis.
409/Circle on Reader's Service Coupon

SHIPPING LOSSES—Can be cut with use of Bricarton. Corrugated paper brick cartons eliminate call backs and shipping losses, cut handling costs, help in palletizing, cushion brick to protect against damage. Available in all sizes for brick, tile, terra cotta, refractory brick. Canton Corrugated Box Co., Canton 5, Ohio.
410/Circle on Reader's Servise Coupon

COLOR BRICK—Thinking of color? Write Ferro, describing your equipment, firing ranges, type of clay and proposed method of applying color. Ferro makes colors for glazing, body staining, engobe, and sandblasting. Ferro Corp., Color Div., 4150 E. 56th St., Cleveland 5, Ohio.
411/Circle on Reader's Service Coupon

DUMPTORS—Capacity of wide-flared 6-yard body, speed and maneuverability, gravity-dump that never wears out are among the reasons the Dumptor is used so widely in pit hauling. Koehring Co., Milwaukee 16, Wis.
412/Circle on Reader's Service Coupon

TERRALOADER — New unit by Case has four-wheel drive in loader that can be equipped with buckets from 1⅜ to 2¾ yards. Features include 40 deg. tipback; 11,000 lbs. breakout; 5,500 lbs. carrying capacity. J. I. Case Co., Racine, Wis.
413/Circle on Reader's Service Coupon

TUNNEL KILN — Output at three Glen-Gery plants, using Harrop tunnels, is running 31,800 brick more than design proposals. Same kilns are giving a better than 97% recovery of first grade brick. Harrop Ceramic Service Co., Columbus, Ohio.
414/Circle on Reader's Service Coupon

FULL CONTROL — Automatic control of temperature by Bristol in every phase of firing can help you get better, more uniform product; helps to keep more constant quality in colored product. Use of controls can also cut down on manpower in supervision work. Bristol Co., Waterbury, Conn.
415/Circle on Reader's Service Coupon

FREEPORT BRICK—Buildings at this new plant are of corrosion-resistant Kaiser aluminum. Advantages Freeport found included installation savings because of lightweight and special design features; plant should have long life at a low initial cost. Kaiser Aluminum, Chicago, Ill., or Oakland, Calif.
416/Circle on Reader's Service Coupon

PRESSING — Lassman offers a press that uses a proven method for forming ware from dry, granular material in a press that operates smoothly, without leaks, and with minimum maintenance. Full details in Bulletin BL-158 from Benjamin Lassman & Son, Route 8, Glenshaw, Pa.
417/Circle on Reader's Service Coupon

STRAPPING—Denver Brick & Pipe Co. is using the Acme powered brick strapping station. The set-up uses power equipment to minimize manual labor and speed output. Included is a feed device that automatically supplies paper corner protectors. Also used is a full-powered A4 Steelstrapper; new strapping dispenser; power strap feed track. Acme Steel Strapping, Chicago 27, Ill.
418/Circle on Reader's Service Coupon

TAILORED MACHINERY—Bonnot builds a complete line of clay working machinery that is precision engineered to individual plant requirements. Because of possible variations in raw materials and products, Bonnot has a Research-Development laboratory to help solve the individual plant's problems. Bonnot Co., Canton, Ohio.
419/Circle on Reader's Service Coupon

EROSION RESISTANT — Fans made by Westinghouse are designed to handle abrasive gases at elevated temperatures and high pressures. Features include ribbed blade liners for severe abrasive service; flat blade liners to prevent material build-up; flat housing and scroll liners. Open wheel with radial tapered blades reportedly provides low stress and long rotor life. Sturtevant Div., Westinghouse Electric Corp., Boston 36, Mass.
420/Circle on Reader's Service Coupon

SHAKER CONVEYORS — Syntron shaker conveyors can handle damp or dry, hot, cold or corrosive materials at high rates. The conveyors are available in lengths and widths to meet most operating requirements. Syntron Co., Homer City, Pa.
421/Circle on Reader's Service Coupon

FLAT FLAME—Burners by North American place the flame close to the work without risk of hot spots or flame impingement. Heating is reported to be uniform over a large area. North American Mfg. Co., Cleveland 5, Ohio.
422/Circle on Reader's Service Coupon

KILN CARS—Miller Equipment Co. reportedly is the only manufacturer that maintains complete tunnel kiln and kiln car facilities. Miller engineers design, build, and service kiln cars for every type of installation. Miller kiln cars feature lightweight yet sturdy, all-welded construction. Miller Equipment Co., Salisbury, N. C.
423/Circle on Reader's Service Coupon

CONVEYORS—A large stock plus standardized components allow you flexibility in your conveyor operations with use of Barber-Greene conveyor components. Trouble-free operation results from factory aligned and adjusted drives and terminals. Barber-Greene Co., Aurora, Ill.
424/Circle on Reader's Service Coupon

CLAY STORAGE — Varco clay storage buildings can help cut your production costs by insuring a sufficient supply of workable clay. The structure can be erected on your foundation for a cost as low as $1 per ton of storage space. R. G. Varner Steel Products Co., Pine Bluff, Ark.
425/Circle on Reader's Service Coupon

TRACTOR SHOVEL—Yale has designed this new unit as a new concept in material handling. Included is 45 deg. ground-level bucket tip-back; quick acceleration; 6' dumping clearance; speeded cycle operation. Yale & Towne Mfg. Co., Philadelphia, Pa.
426/Circle on Reader's Service Coupon

PIPE DRYING—Since each clay used has individual characteristics, affecting the drying operation, Robinson studies clay characteristics when designing dryer operation. This study can help produce better quality ware more economically. Robinson Ventilating Co., Zelienople, Pa.
427/Circle on Reader's Service Coupon

OPACIFIERS — Consistent uniformity of their opacifiers, in any desired quantity, is stressed by TAM. The complete line includes Superpax A, Superpax, Opax, Opax S, Treopax, Zircopax, and Double Silicates. Titanium Alloy Mfg. Co., New York City.
428/Circle on Reader's Service Coupon

MANY UNITS—The Vibrapac is versatile enough to make literally dozens of different types of units, so that the blockmaker can supply all units used in building. Plain pallet stripper means that only one set of Plain Pallets is required for all sizes of units. Besser Co., Alpena, Mich.
429/Circle on Reader's Service Coupon

CROMITE—Foote Chromite gives "natural" coloring in bluish-gray brick. When added to buff-burning clays, produces attractive bluish-gray shades that match closely many colors of limestone. Foote Mineral Co., Philadelphia 44, Pa.
430/Circle on Reader's Service Coupon

PUGMILL KNIVES — Mixmax pugmill knives are custom built for each installation. For building brick and tile, refractories, sewer pipe, drain tile. Straight Engineering Co., Adel, Iowa.
431/Circle on Reader's Service Coupon

GREEN STRENGTH—Can be increased with use of Additive-A. In addition to greater green strength, this new product can permit reduction of tempering water; cut dryer loss; reduce lamination; improve workability; extend auger life; help control scumming, manufacturer reports. Kimberly-Clark Corp., Neenah, Wis.
432/Circle on Reader's Service Coupon

HARDFACING—Dixie Fire Brick Co., of Kimberly, Ala., recently set up the following hardfacing program with help from Stoody Co.: 60" muller tires, 3" thick with a 12" face—finished with a pass of Stoody 21; augers, shredders, sealing dies, spacing rings, and paddles of the extruding machine—with other Stoody alloys. Stoody Co., 11937 E. Slauson Ave., Whittier, Calif.
433/Circle on Reader's Service Coupon

OHIO KILNS — Have recently been installed at many plants, including Bowerston Shale, Orrville Tile, Majenica Tile and Owensboro B&T. Capacities from 10,000 to 25,000 brick per day; needs minimum of plant changeover for installations; lower cost kilns for smaller plants. Ohio Kilns, Granville, Ohio.
434/Circle on Reader's Service Coupon

How to Get Rush Information

If you want further information or literature describing the products in this special feature, just use the handy card you will find on page 18. Our Reader's Service Dept. will see that you obtain the requested information as quickly as possible.

BRICK MACHINE—And cutter combination by Chambers was engineered to work together for better production. The 12AC brick machine, up to 300 hp, has 19¾" auger, fed by 21" augers in vacuum case; 12' pub mill tub. The 30 series cutter is available in four models, each available in lengths up to five 12" cuts. Chambers Bros., Philadelphia, Pa.
435/Circle on Reader's Service Coupon

SCREEN TRANSFORMER — An Ohio refractories plant has put screening on a production basis with screen heating transformers, resulting in less man hours spent cleaning blinded screens, extending screen cloth life when you do away with pounding, brushing, flame heating, bouncing chains, and less recirculation of fines and wasted grinding time. Screen Heating Transformers, Inc., Massillon 81, Ohio.
436/Circle on Reader's Service Coupon

ONE SHOVEL—at an Ohio plant handles all pit work for making 70 million brick a year; two round-the-clock plants depend on the shovel's output. User is said to like the reserve power and strength; self-cleaning crawlers and other features of his Marion 1-yard shovel. Marion Power Shovel Co., Marion, Ohio.
437/Circle on Reader's Service Coupon

CAR TOPS—By Paco are reported to last twice as long, cutting replacement costs up to 50%. Maker says they help you get better heat distribution, more uniform ware, at lower cost. North State Pyrophyllite Co., Greensboro, N. C.
438/Circle on Reader's Service Coupon

BUFFALO FANS—CR radial blade fan was designed for rugged durability, with heavy gauge construction; balanced wheels and shaft; high volume operation may mean that you can use smaller size fan, lowering your initial cost. Buffalo Forge Co., Buffalo, N. Y.
439/Circle on Reader's Service Coupon

BLACK CORING REDUCED—Up to 50% reduction, according to various brick companies, with use of Brickaid. Product also cuts dryer loss 70% or more; decreases firing time; increases green strength, has other benefits. Spencer Chemical Co., Kansas City, Mo.
440/Circle on Reader's Service Coupon

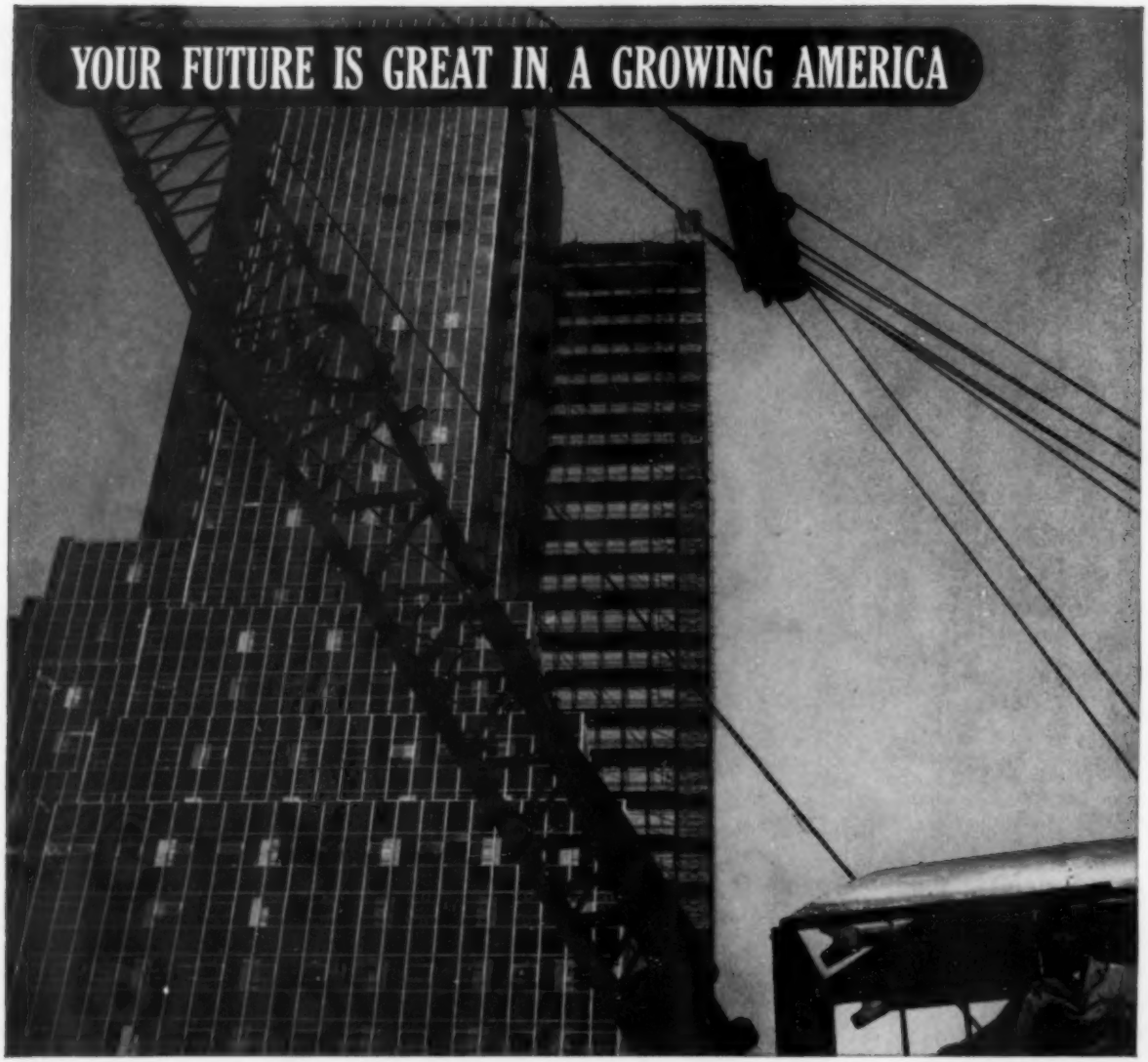
BRICK FORKS — This was said about Bickerstaff Brick forks: ". . . We find a saving of several thousand dollars because we do not require a large inventory of wood pallets . . . using a side shifter, we can make a better load on the truck for shipping. We can stack the brick tighter, and in better condition. . . ." Bickerstaff, Inc., Columbus, Ga.
441/Circle on Reader's Service Coupon

384 GRINDER—American grinder has been designed for a ton a minute capacity, with all clay materials; can handle wet or dry material; has no screen plates to clog. American Clay Machinery Co., Marion, Ohio.
442/Circle on Reader's Service Coupon

THAYER SCALES — Give continuous formulating with accuracy within ½%. Control which formerly required use of batch system can now be had with use of this continuous weighing system. Plate leverage system is guaranteed accurate for the life of the scale; has no knife-edge pivots. Thayer Scale Corp., Pembroke, Mass.
443/Circle on Reader's Service Coupon

ROCKFACER — Converts culls into premium brick. Rockfacer also reports that the unit transforms 2,000 second-grade bricks per hour into number 1 rockface brick. Is stated to pay for itself in 90 days or less, eliminating inaccurate hammer and chisel methods. Rockfacer Co., Mesquite, Texas.
444/Circle on Reader's Service Coupon

LW PLANTS — Complete lightweight aggregate plants or single units can be built for you by McNally-Pittsburg. Company has rotary kilns, coolers, conveyors, roll or jaw crushers, much other equipment. McNally-Pittsburg, Pittsburg, Kansas.
445/Circle on Reader's Service Coupon



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2. More Jobs—Though employment in some areas has fallen off, there are 15 million more jobs than in 1939—and there will be *22 million more* in 1975 than today.

3. More Income—Family income after taxes is at an all-time high of $5300—is expected to pass $7000 by 1975.

4. More Production—U.S. production *doubles* every 20 years. We will require millions more people to make, sell and distribute our products.

5. More Savings—Individual savings are at highest level ever—*$340 billion*—a record amount available for spending.

6. More Research—*$10 billion* spent each year will pay off in more jobs, better living, whole new industries.

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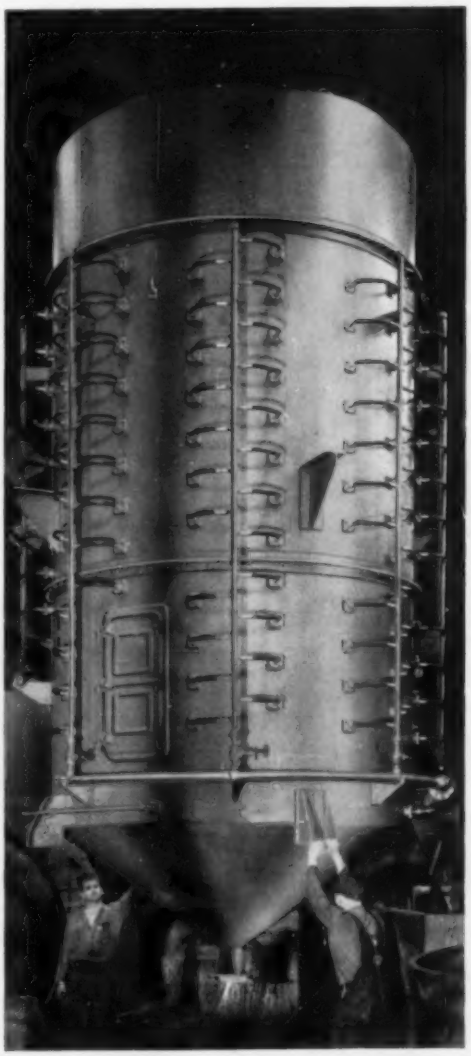
Where air cleaning equipment is required to withstand high temperatures, sticky, corrosive or abrasive dusts, fumes or gases in any combination, "Buffalo" Hydraulic Scrubbing Towers offer many important advantages. These compact, economical units provide high efficiency, plus the ability to stand up under the most severe conditions. A combination of centrifugal force, a finely atomized spray system and scrubbing against a wetted surface are utilized to give maximum effectiveness.



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1 Read the New Products Information

ON PAGES 21, 22

also

Materials, Equipment & Services

PAGES 14-15

Superintendent's Library

PAGE 22

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8-58

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402-Swiss Fabricating
403-Dodge Mfg. Co.
404-Pearne & Lacy
405-Clipper Mfg. Co.
406-Lanly Co.
407-Toronto Foundry
408-Refractory & Insulation
409-T. L. Smith
410-Canton Box
411-Ferro Corp.
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420-Westinghouse
421-Syntron Co.
422-North American Mfg.
423-Miller Equipment
424-Barber-Greene
425-Varner Steel
426-Yale & Towne
427-Robinson Ventilating
428-Titanium Alloy
429-Besser Co.
430-Foote Mineral
431-Straight Engineering
432-Kimberly-Clark
433-Stoody Co.
434-Ohio Kilns
435-Chambers Bros.
436-Screen Heating
437-Marion Shovel
438-North State Pyrophyllite
439-Buffalo Forge
440-West Va. Pulp-Paper
441-Bickerstaff
442-American Clay Mchry.
443-Thayer Scale
444-Rockfacer Co.
445-McNally-Pittsburg
446-Dodge Mfg. Co.
447-Paris Mfg.
448-Signode Steel
449-Marvel Engineering
450-Dalsen Corp.
451-LeTourneau-Westinghouse
452-Syntron Co.
453-Acme Steel
454-Barber-Greene
455-Falk Corp.
456-Besser Co.
457-Yale & Towne
458-W. Va. Pulp-Paper
459-Clark Equipment
460-J. I. Case

Page 2 Bonnot Co.
Page 3 Green (A.P.) Fire Brick Co.
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Page 80 American Clay Mchry.

NAME..... TITLE.....

COMPANY .....

STREET .....

CITY..... ZONE..... STATE.....

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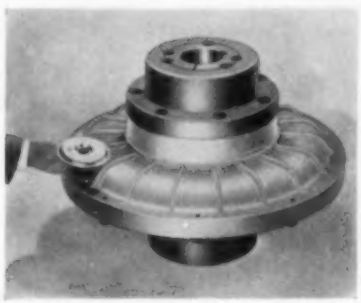


Flexidyne Line

An expanded line of Flexidyne Dry Fluid drives and couplings, ranging in capacity from ¼ to 1000 hp is newly announced by Dodge. Added to the line were three larger sizes and a new small size. An 18″ diameter Flexidyne is now available either for use as a drive with V-belts or as a coupling for direct shaft-to-shaft connection. Either will deliver up to 200 hp at 1200 rpm. Largest unit is a 27″ coupling.

Dodge Mfg. Co., Mishawaka, Ind.

446/Circle on Reader's Service Coupon

New Paris Drill

Paris is now making a new model F-86 Jeep mounted hydraulic vertical drill, that's reported to have greater drilling power, more maneuverability. Features twin cylinder hydraulic feed, fast 6′ stroke, low cost P.T.O. powered, 9 auger speeds, centralized controls. Unit handles augers from 3″ to 12″ in 5′ sections.

Paris Mfg. Co., Paris, Ill.

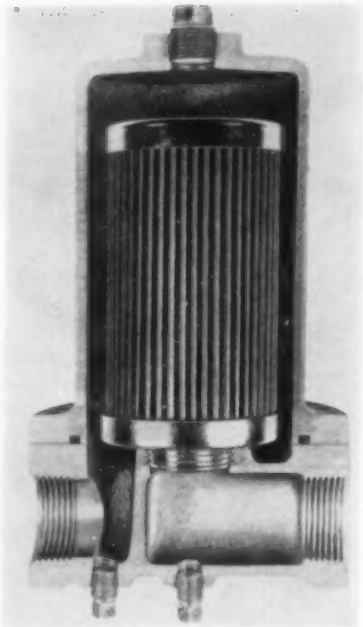
447/Circle on Reader's Service Coupon

Stretcher & Dispenser

A new type of tensioning tool for heavy duty strapping has been announced by Signode, reported to be faster, easier to load than conventional tools, to save several cents of strapping on each operation by eliminating strap curl that's wasted when windlass-type tools are used. Called Model FN-114, tool weighs 20 lbs., is used on 1¼″ heavy duty strapping. Can use the tool for strapping directly from coil; using cut-to-length strap; or with strapping predraped on packages. New DA-114 Cobra dispenser has also been announced by Signode, a floor-type dispenser.

Signode Steel Strapping Co., Chicago 47, Ill.

448/Circle on Reader's Service Coupon



Line Type Filters

Newly designed line type filter is reported to offer advantages in filtration of hydraulic oils, coolants, lubrications. Filter is applicable to requirements of operating pressures up to 150 psi at temperatures to 300 F. All units are available with or without by-pass valve.

Marvel Engineering Co., 7227 N. Hamlin, Chicago 45.

449/Circle on Reader's Service Coupon

Resin Dispenser

Delsen has announced availability of a positive displacement resin dispenser for use with liquid resin and hardener systems. Accurately calibrated to meter both liquid hardeners and resin in exact proportions, the unit is reported to eliminate the necessity for weighing operations. The resin material is metered through drip-proof valves; hand driven and motor models are available.

Delsen Corp., 719 W. Broadway, Glendale 4, Calif.

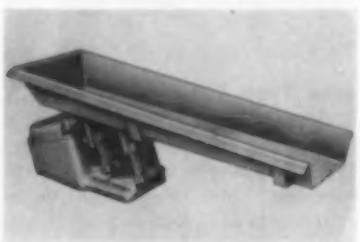
450/Circle on Reader's Service Coupon

Bigger Tournapull

Horsepower has been increased to 335, capacity to 21 yards, struck and 28 yds. heaped on the Model B Tournapull. The new standard engine is a Cummins six-cylinder, four cycle diesel with turbocharger; higher speeds are now attainable. Struck capacity has been boosted nearly 2 cu. yds.

LeTourneau - Westinghouse Co., Peoria, Ill.

451/Circle on Reader's Service Coupon



Variable Rate Feeder

The new model F-010 electromagnetic vibratory feeder is said to offer fast, high-capacity, rate controlled feeding. An electromagnetic drive produces 3600 vibrations per minute; rheostat-control allows feed rate adjustment up to the maximum 3 tph.

Syntron Co., Homer City, Pa.

452/Circle on Reader's Service Coupon

Steelstrap Dispenser

Acme E33 Steelstrap dispenser, a new one, weighs 12 lbs., can be loaded with a coil of strap in less than a minute. Strapping is stripped from the inside of the coil through a coil spring guide. Spring action of the steel strapping turns the dispenser to keep the coil against the outside edge of unit. Strapping speed is said to be increased while operator fatigue is reduced.

Acme Steel Co., Chicago 27.

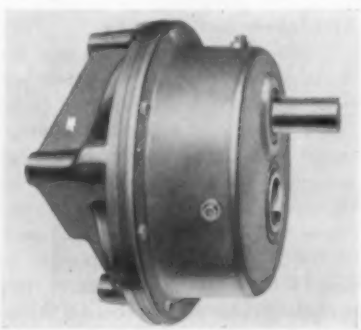
453/Circle on Reader's Service Coupon

Pulverizer Accessory

A new pulverizer attachment for Barber-Greene's Model 82-A or 582 bucket loaders has been announced recently. The attachment can strip surface soil rapidly, B-G reports, load and pulverize. The pulverizer is driven by a separate, small gas power unit. Topsoil or clay is excavated by the spirals and elevated by a continuous chain of buckets. From buckets, the material falls through a flail arrangement and is pulverized before going to truck.

Barber-Greene, Aurora, Ill.

454/Circle on Reader's Service Coupon



Flange Mounted Drive

A compact Falk gear drive is now available which bolts directly to the driven machine, reportedly resulting in reduced cost and increased efficiency. The drive bolts directly to driven machine, and is designed with bearing capacities for overhung and thrust loads to allow installation of this drive into the driven machine as a geared pillow block, if desired. Units from, single reduction, ½ to 10 hp; in double reduction from ½ to 5 hp.

Falk Corp., Milwaukee 1, Wis.

455/Circle on Reader's Service Coupon

Block-O-Mation

A folder illustrating and describing Block-O-Mation is available from Besser. The booklet shows four ways to unload block from racks and place them on a cubing platform or cubeveyor.

Besser Co., Alpena, Mich.

456/Circle on Reader's Service Coupon

Tractor Shovel

Yale has published a 20-page brochure on its Y-18 industrial tractor shovel which reportedly performs 25% more work than comparable models.

Yale & Towne Mfg. Co., Philadelphia.

457/Circle on Reader's Service Coupon

Polyfon Fact Book

A pocket-size new fact book, just published, fully describes uses for Polyfon, applications and performance data in question-an wer format.

West Virginia Pu'p & Paper Co., Charleston, S. C.

458/Circle on Reader's Service Coupon

Outdoor Fork Truck

Specifications, dimensions and features of the CY-20, a 2000 lb., pneumatic tire, gas powered fork truck are contained in a new 6 page brochure. The unit was particularly designed for outdoor use.

Clark Equipment Co., Battle Creek, Mich.

459/Circle on Reader's Service Coupon

Tractor Attachments

Trenching, loading and dozing machines, complete units for Case 34 and 42 hp utility tractors, are described and illustrated in 8 new publications available.

J. I. Case Co., Racine, Wis.

460/Circle on Reader's Service Coupon

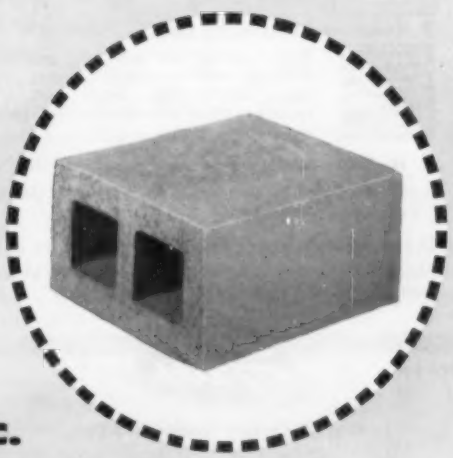
Accepted MORE and MORE by plants wanting to save MORE and MORE!

PHOTO—Cloud Ceramics No. 2 Plant, Concordia, Kansas. This modern plant uses 7" x 8½" x 19½" PACO car tops on top deck; 4½" x 8½" x 8¼" PACO car tops, with light weight insulation, for perimeter.

PACO CAR TOPS

More and more tunnel kiln brick producers are finding they can reduce car top replacement costs as much as 50% with PACO! And, here's why PACO car tops last longer. They are made from the mineral pyrophyllite, a superior raw material. The result is a stronger, lighter weight car top that is highly resistant to thermal shock. PACO car tops do not have a softening point below actual fusing point, providing greater resistance to hot load deformation. The result is better, more efficient production. They are easy to handle and install, and simple to replace individually as needs.

There is a PACO engineer as close as your telephone — or write for complete information!



NORTH STATE PYROPHYLLITE COMPANY, INC.

Telephone BRoadway 4-7055 Greensboro, North Carolina

OTHER PACO PRODUCTS INCLUDE: • PACO PLASTIC • PACOCAST • PACO H.T. CEMENTS • PACO FIRE BRICK MORTAR • PACO SIDE CAR BRICK • PACO FIRE BRICK • PACO LADLE LINING • PACO HEATZONE COMPOUND

Shock loads no problem for Super V-Belts on punch press

Severe shock loads, which caused standard V-belts to fail, were no problem for Gates Super Vulco Ropes on this punch press.

No other V-belt has ALL these advantages

1. Flex-Weave Cover (U. S. Pat. 2519590)

A Gates exclusive: provides greater flexibility . . . prolongs belt life . . . helps deliver more power to driven machine.

2. Concave Sidewalls (U. S. Pat. 1813698)

Note the concave sides shown in Fig. 1. As belt bends, concave sides become straight, making uniform contact with sheave goove (Fig. 1-A). Even contact means uniform wear . . . far longer belt life.

3. Tough, resilient Tensile Cords

Super strong and resilient; provide 40% greater horsepower capacity . . . easily absorb heavy shock loads . . . reduce number of belts required, save weight and space.

4. High Electrical Conductivity

Built into Gates Super Vulco Ropes for safer drives (in explosive atmosphere).

5. Oil, Heat, Weather Resistant

Made with special rubber compounds, Super Vulco Ropes stand up longer under all conditions.

TPA 315

Gates

World's Largest Maker of V-Belts

Especially designed to handle the heaviest shock loads, Gates Super Vulco Ropes solve tough drive problems—reduce both maintenance and replacement costs.

For example: Mr. Daniel Rusinow, president of the R & D Manufacturing Co., Detroit, Michigan, needed to improve efficiency in a 250-ton punch press. The press was originally driven by flat belts, but these slipped and proved unsatisfactory.

Mr. Rusinow first replaced the flat belt drive with standard V-belts, but the severe shock loads of the punch operation caused the belts to fail.

A superior shock-absorbing drive was needed—the local Gates Field Engineer was consulted, and Super Vulco Ropes recommended for the job.

Mr. Rusinow commented, "After our experience with other V-belts, I did not believe it possible to design such an excellent drive, but Gates engineering service and Super V-Belts proved the right answer to the problem."

● **Drive data and design assistance are quickly available to you. Simply call your nearby Gates distributor. Gates V-Belt stocks are carried in all major industrial centers.**

The Gates Rubber Company
Denver, Colorado

Gates Super VULCO ROPE Drives

40% more Horsepower Capacity

FIVE days' time completed the SWISS-LOK structural frame for this 54,300 sq. ft. building for Logan Clay Products Co. at Logan, Ohio.

ONE crane was the sole erection equipment required for this building structure for Davis Firebrick Company at Jackson, Ohio. Crane service was required but one-third the time of conventional erection because of fast SWISS-LOK connections.

Corrugated aluminized steel sheeting was selected by Davis Firebrick Company for this building at Oak Hill, Ohio. Any type of sheeting desired is applicable to SWISS-LOK structures.

Brick and Clay Products Companies get lower cost, faster building construction with SWISS-LOK Tubular Building Frames

LOWER COST BECAUSE:

Tubular members save ⅓ steel weight without loss of structural strength
⅓ less shipping weight
Greatly reduced crane service (no other equipment needed)
Greatly reduced erection labor hours

FASTER BECAUSE:

No welding, cutting, bolting or riveting at the site
All parts pre-fitted for quick assembly and locking
All frame members can be shipped by fast motor freight

BETTER BECAUSE:

Swiss-Lok building frames do not depend on roofing and siding construction for support, alignment or rigidity
Truss chords are parallel to roof pitch, allowing more overhead space for movement or storage of materials
All new, tested pipe is used exclusively

All stress calculations for SWISS-LOK building structures conform with A.I.S.C. standards. Any type of roofing and siding may be used, and standard wall tying and sheet metal fastening are applicable. For descriptive, illustrated literature, write:

SWISS FABRICATING, INC.

Camp Horne Road, Pittsburgh 2, Pa. • Phone WEllington 1-2646

Rx *for your BIG 'PRE-BOOM' EXPANSION and CONVERSION PERIOD AHEAD . . . .*

Ceramic Data Book

To Help You Plan, the CERAMIC DATA BOOK Is Your Ready Reference for

1. Specific Engineering Tables and Charts.
2. Buyers Directory of Supplies, Materials and Equipment.
3. Handy, practical information for use in conferences when your plans for new processes or expansion are in the making.
4. Catalogs of Producers and Distributors of Supplies, Materials and Equipment addressed specifically to glass, enamel, pottery, electronic ceramics, refractories and clay products men — you will prefer it to wading through scattered individual general catalogs.
5. Finger tip information that eliminates the necessity of maintaining separate individual catalog files which seldom prove to be up-to-date anyway.

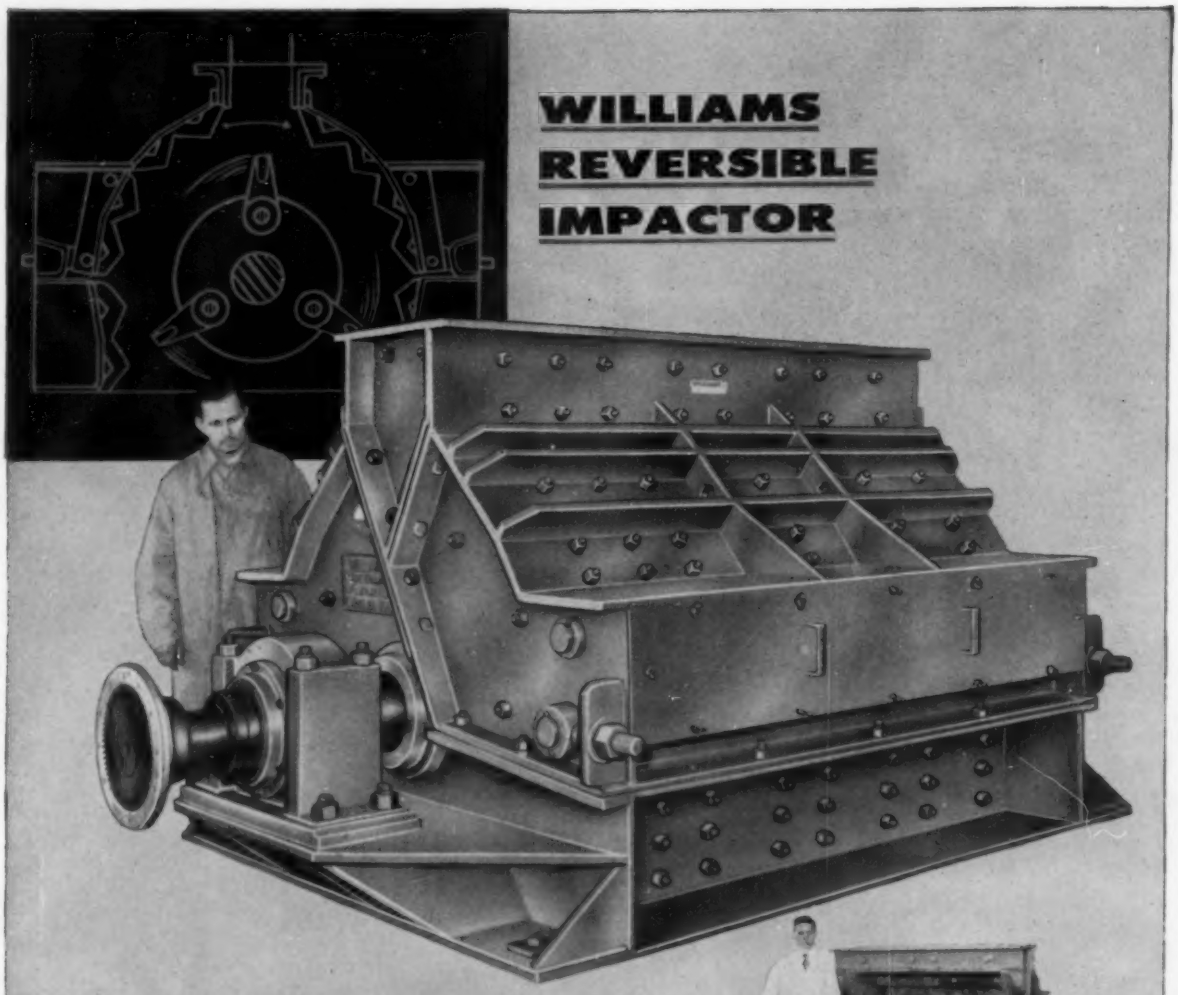
SPECIAL NOTE TO SUPPLIERS—

It's not too late to be represented in the 1958-'59 CDB. Wire, or phone (FRanklin 2-6880) collect immediately to make arrangements for catalog pages, if you have not already done so. Time is short! . . . So act at once.

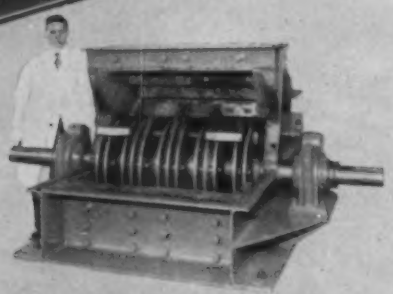
Ceramic Data Book

5 South Wabash Avenue Chicago 3, Illinois

WILLIAMS REVERSIBLE IMPACTOR



- 100% Impact Reduction
- No Friction Or Abrasion
- Unobstructed Discharge
- Less Upkeep Expense

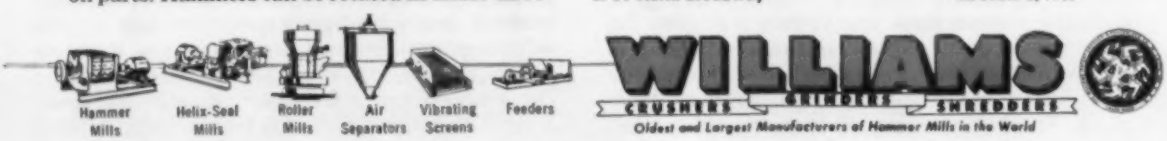


Internal view showing manganese steel impact blocks, hammers and liners. Rugged, heavy steel plate construction. Extra large shafts are mounted in oversize bearings sealed in self-aligning housings.

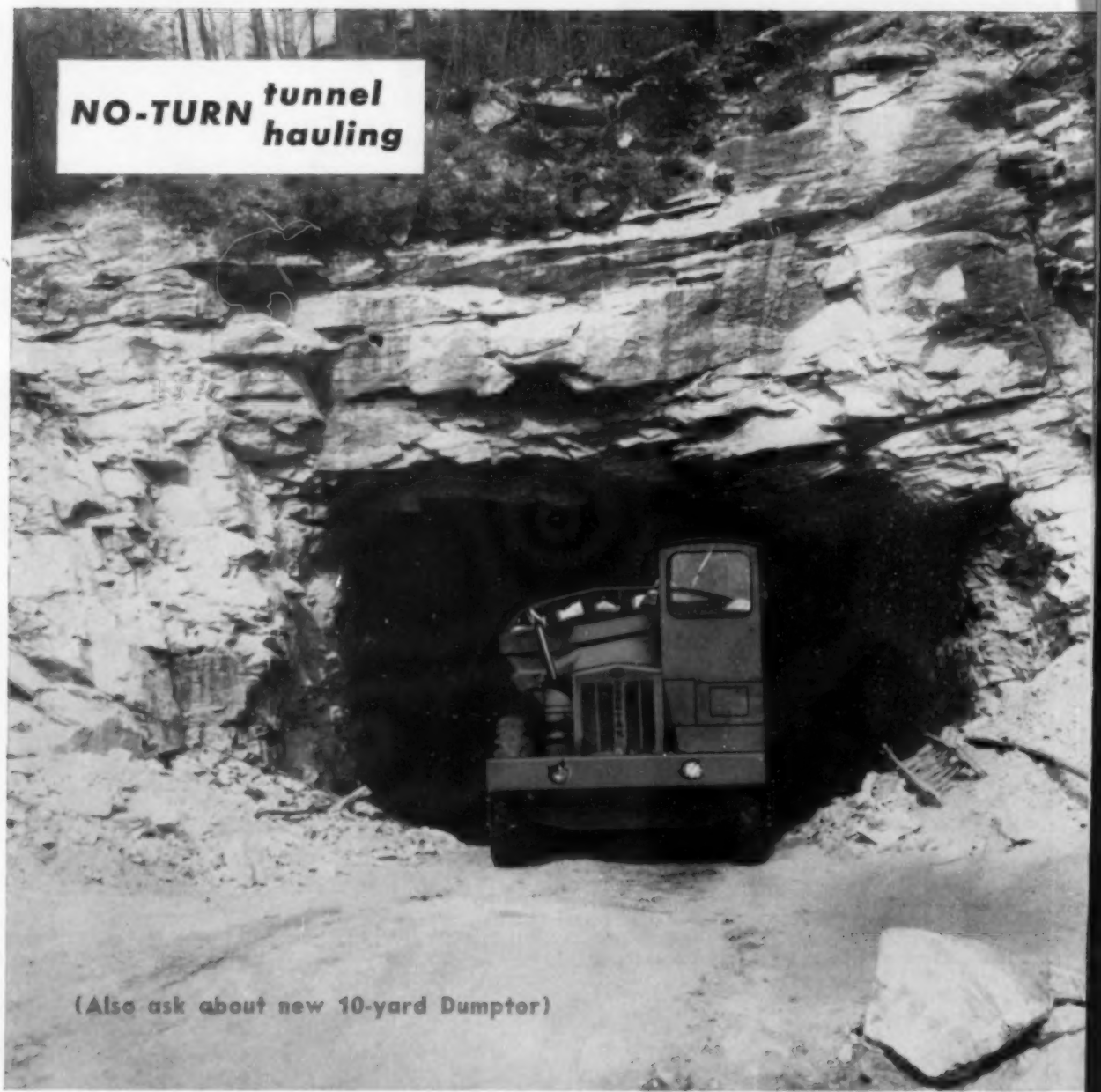
Lower Cost Crushing And Grinding

Will reduce clay and shale direct from the bank to 8, 10 mesh, or finer, for burned ware. Reduces its own screen tailings. 100% impact action permits reduction of abrasive materials with lower upkeep expense. Material falls *between* the hammers which throw it against the impact blocks, setting up a repeated ricochet action and the reduction is entirely by impact with no wearing, abrasive, grinding action thereby lessening wear on parts. Hammers can be rotated in either direction, rotated to the right today, to the left tomorrow thereby giving double hammer life. Impact blocks adjustable for wear and fineness of product. Finished material is discharged freely which further lessens upkeep expense. A size for every job. Describe your work and let us tell you about one for your use.

WILLIAMS PATENT CRUSHER & PULVERIZER CO.
2709 North Broadway — St. Louis 6, Mo.



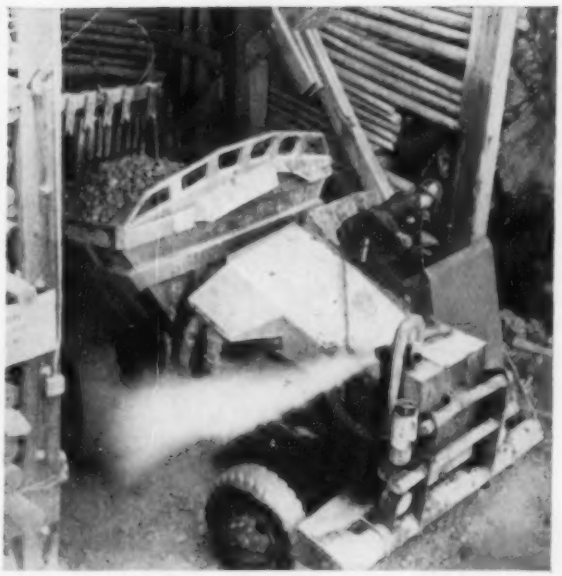
WILLIAMS
CRUSHERS GRINDERS SHREDDERS
Oldest and Largest Manufacturers of Hammer Mills in the World



Koehring® Dumptor® shuttles underground *without turning*

Shuttling back and forth in this hillside mine, Koehring Dumptor, heavy-duty 6-yard hauler, drives into tunnel, gets its load — then drives out at the same speed as it entered. There's no room inside to turn — *and no need to turn,* because Dumptor operates with equal ease and speed in either direction. It gets this unique, no-turn operating advantage through a Koehring constant-mesh transmission that gives the same 3-speed travel forward and reverse. Dumptor no-turn hauling has gained wide acceptance in both underground and strip mining, as shown on these pages. It solves problems of operating along overhead trestles, on open-pit ledges, narrow haul roads — is especially practical for stockpiling. There's an important production advantage, too. Every turn eliminated cuts 15 seconds off cycle time. This adds up to a substantial increase in yards or tons hauled per hour. For example — by saving only 2 turns on a round trip, time studies prove that Dumptor often increases hourly yardage output more than 10% on an average 1000-foot haul. Better have your Koehring distributor show you what Dumptor no-turn hauling can mean on your mine, quarry or stockpile operations. Call him today or write for new 24-pg. catalog.

Mining in Mexico — Rugged, mountainous area near Mexico, D. F., is dotted with deposits of valuable red and blue sand. Mine haul roads are steep and winding. At a typical mine (above), 3 Koehring Dumptors haul 600 feet from pit to hopper. Their big, safe brakes, power steering, 24% grade-climbing ability really pay off on work like this!



1 ¼ miles underground — Hauling conditions are as tough as they come in this Canadian lead zinc mine. It's located 6000 feet up a mountainside. Ore is heavy — and the haul is 1 ¼ miles underground. Conventional dump trucks tried it — proved unsatisfactory — were replaced by a fleet of 8 Koehring Dumptors, now working 2 shifts a day.

Dump time: 1 second — At quarry crusher, Dumptor drives up, body forward. Operator trips a body-release lever, and *gravity* tilts the body — dumps the load instantly. Free-swinging kick-out pan breaks load suction for fast, clean dump when hauling wet, sticky materials — bolts down to floor of body when handling heavy broken rock like this.

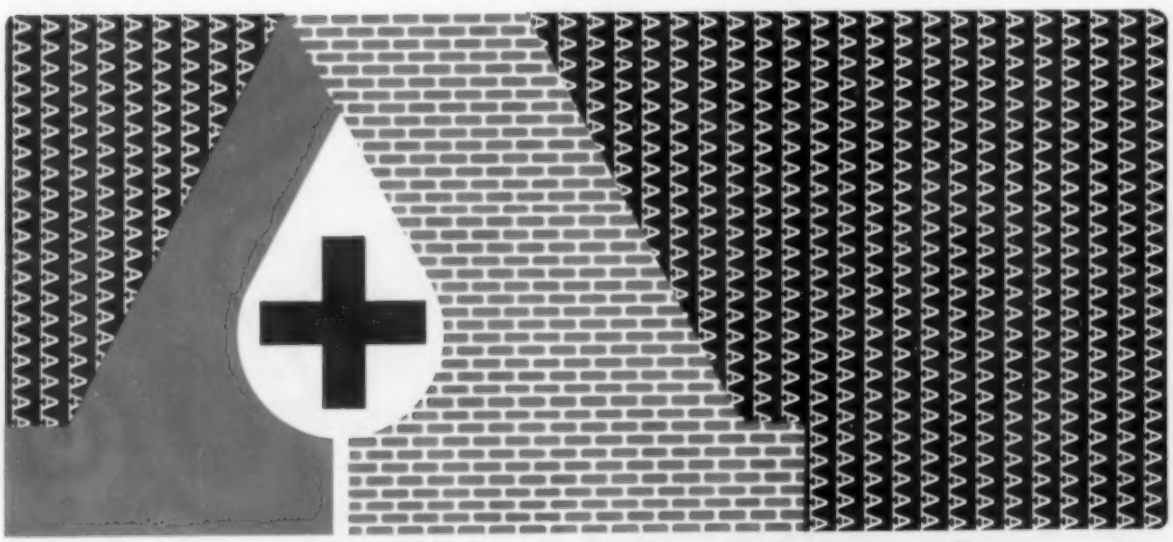
Re-working a slag bank — Slag is being reclaimed from this waste bank, swept by a magnet to remove scrap metal, run through a crusher, and used as sub-base material on roads. A Koehring 1 ½-yd. 605 shovel (above) loads slag into Dumptors, a heavy-duty, big-production team! Check Koehring line of shovels (½ to 3 yds.) cranes (10 to 95 tons).

KOEHRING DIVISION OF KOEHRING COMPANY, Milwaukee 16, Wis.

to reduce laminations lubricate with Kimberly-Clark's Additive-A

The unique body lubrication that results from introducing Additive-A clay conditioner at the pug mill produces such an even flow of clay that laminations are all but totally eliminated. What's more, there is no further need for additional die lubrication; and dies, augers and knives wear much longer.

In addition, Kimberly-Clark's Additive-A increases green plastic strength; cuts dryer loss; improves clay workability; increases dry green strength; permits more even temper; controls scumming; and upgrades the quality of all ware.



Write for descriptive folder, to:

Kimberly-Clark Corporation

NEENAH, WISCONSIN

CHEMICAL PRODUCTS

Brick & Clay Record

August, 1958 Vol. 133, No. 2

5 SOUTH WABASH AVE.
CHICAGO 3, ILL.
FRanklin 2-6880

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now in 68th year.

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BRICK AND CLAY RECORD is indexed by Engineering Index, Inc.

HAROLD H. ROSENBERG, Founder
1882-1958

Low-Rating New Products Low-Rates Our Industry

A very important suggestion was made at a recent meeting of brick manufacturers, a suggestion that we feel obligated to pass on to the industry.

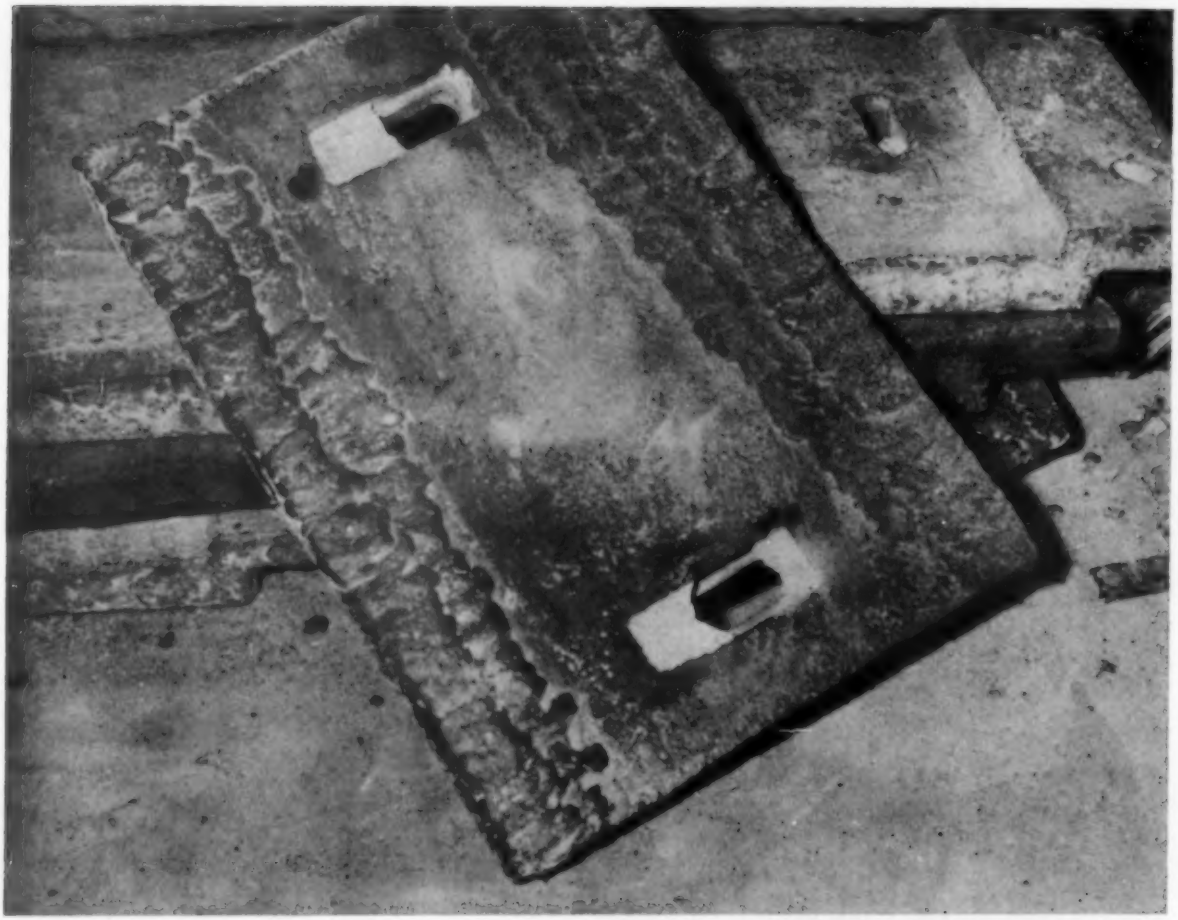
The discussion centered about the development and launching of new products in the building trade. It seems that when a new product is introduced, certain manufacturers in the industry agree to make the new product. Then a promotion plan is created to put the product over through advertising with considerable amounts of time and money involved.

However, some manufacturers who are not interested in producing the new item go far out of their way to damn the new product. Because they're not making the new product, they sell their own product at the expense of the new product and will go so far as to discourage architects and contractors from using the new product. Such a practice not only discourages the use of a new product but reflects upon all clay products.

As a way to avoid low-rating of new products, and to help new products, perhaps the best solution would be to make all non-producers selling agents. The new product should have enough profit built-in to allow a profit to sales agents. As a result, the entire industry would be promoting the new product, increasing its chance of success.

Let's keep remembering that our real competition is outside our industry, always.

The Editors



3 to 10 Times More Muller Plow Life

That's the record after hard-facing with Stoody Alloys!

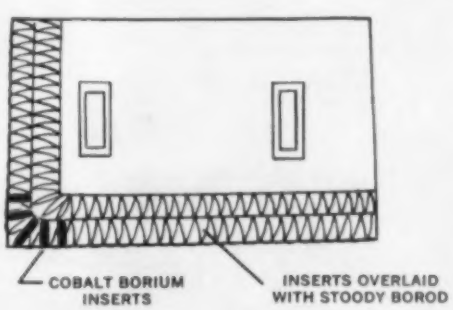
Muller plow life in clay plants over the nation is variable... greatly dependent upon type of material being handled. Yet under any operating condition, Stoody hard-facing at least *tripled* normal life and with special hard-facing treatment, *gave an increase of 1000%!* Here's how it was done.

The muller plow illustrated above was given two heavy wash passes of Stoody 121 on edges and over the wearing face. Application was made by the semi-automatic welder. This treatment gave a 3 to 1 increase in life at nominal hard-metal and labor costs.

Where abrasion is more severe, even better protection is normally afforded by applying Stoody 121 to the face and protecting the wearing edges with Stoody 130 or Borod, tungsten carbide materials.

Under extreme abrasion, involving sharp cutting silica sand, a few Stoody Cobalt Borium inserts on the corner of the plow provide maximum wear resistance, retaining shape and size in these critical areas. (See sketch.) The inserts plus the entire wearing surface are overlaid with Stoody Borod. This application lasted 10 times longer than normal for standard unprotected plows.

For more details on this and other wear problems, see the Stoody GUIDEBOOK. Your Stoody Dealer (over 600 in the U.S. and Canada) has a copy for you. Check the "Yellow Pages" for your nearest dealer or write direct to the company.



STOODY COMPANY

11950 East Stauson Avenue • Whittier, California

Reports from... Clay Products

The Growth Industry

Color Cost Reasonable

The clay products industry has launched upon one of the most important steps forward that has ever been presented to it. That is, the incorporation of color in its product.

It is pretty plain by now that the industry must come to coloring its product, one way or another. The architect is no longer satisfied with red and buff, or some small variation from red and buff, to build walls. He wants greens, blues, yellows, and other colors not naturally obtained from the brick clays.

However, these colors cannot be obtained on the brick, either in its entire body or on the surface, without study, hard work, careful production techniques, and money. It's this last phase of the needs that this item is concerned with.

Many manufacturers who are experimenting with color and see the need for them resent the fact that colors cost 75¢ or $1. a pound. Certainly the color manufacturers would sell it for 10¢ a pound if the color could be made for that price. But it just can't be made and the price is as low as the color manufacturers can possibly make it. Since the architect wants color there is no choice that can be made but to use color, and at the 75¢ a pound.

We have asked many architects about the cost of clay products, with and without color. They said the cost is a secondary concern; they want color brick and are willing to pay for color. The point, then we must conclude, is that the brick manufacturers are still thinking of $30 and $40 brick in this color range, instead of thinking of $80 and $90 a thousand brick.

The brick wall is the cheapest wall that can be possibly be built. It's cheaper by half than any panel curtain wall of other materials. Why then should the brick manufacturer quibble about a doubling of the cost of brick? It still would be much cheaper than the metal or other curtain type wall.

Compete By Using Quality

Here's another case where brick manufacturers should quit competing with themselves and compete with foreign products. You can't make a quality product without quality materials and you cannot compete in a quality market without quality materials.

The color manufacturers are doing their best to bring down the cost of their colors. They are offering a product that can make the brick industry big, and so the brick industry should forget the apparent high cost of colors and use them.

Without them, they may as well close their doors to certain types of work.

Process Needs Local Help

With lightweight clay aggregate rapidly progressing and a large clay block unit already in production, it is a certain assumption that the clay products industry will be supplying a much greater number of brick equivalents to the construction industry in the not-too-distant future.

More products will be used and they will be shipped much farther.

In fact, if present contemplations come to pass, the big worry today is an adequate supply of bricklayers to handle the volume of work. Experience over the past few years proves how difficult it is to swell the ranks of bricklayers.

An alternate bricklaying hurdle is how to increase productivity. The industry has the answer to this in the SCR Masonry Process.

During the past year, the SCR Masonry Process, developed by SCPRF, has made impressive gains. The Process is now on the verge of becoming a full-fledged, accepted tool of our industry but it needs help, perhaps more now than in years to come.

An exceptional job has been done in promoting the Masonry Process in two areas, by Dean Ramey and his manufacturers in the Miss-La Brick & Tile Mfr. Assoc., and by the regional men and manufacturers in the Region 12 area, headed now by Don Wakefield.

The major trouble here is that this success is pretty well exclusive to these two regions, and to gain greater productivity overall, a similar job must be done in all regions.

In our opinion, the keys to this business are available to all regions. Hard work, desire to do the job, patience, promotion and thought are what we feel to be the reasons behind the success of these regions. These elements are open to use by any region or manufacturer.

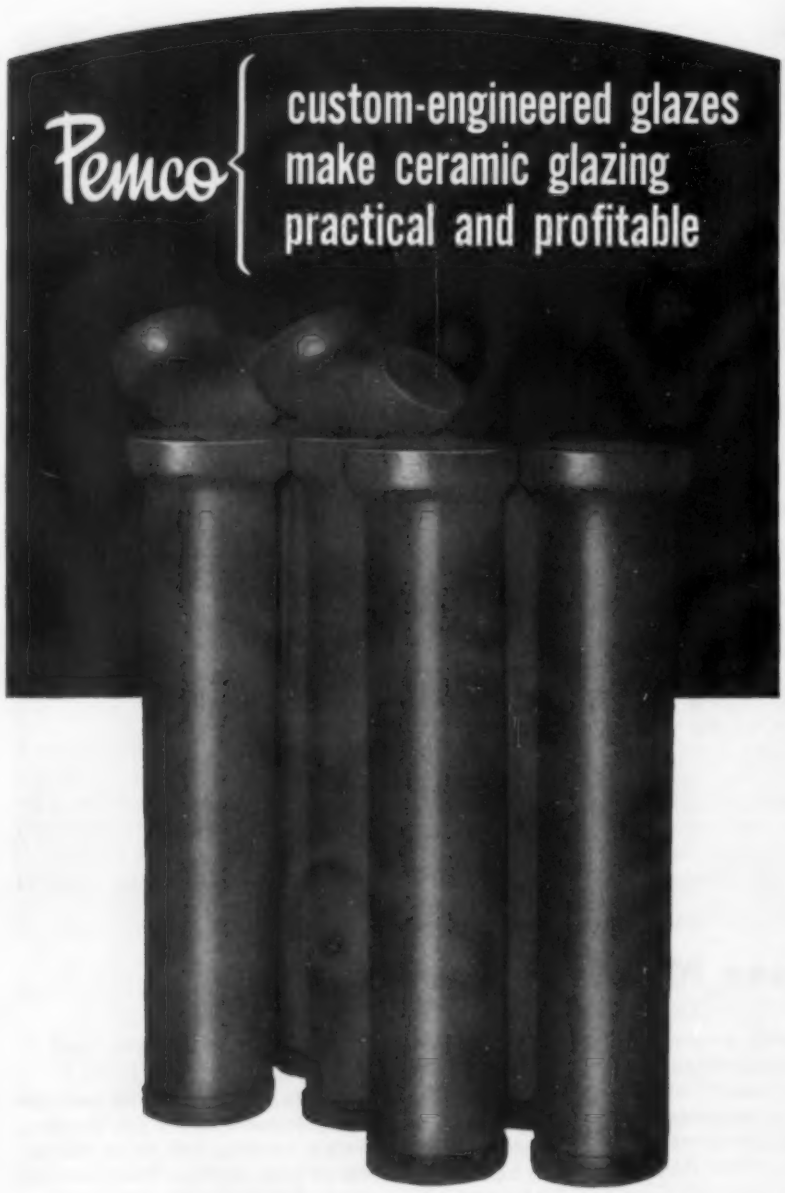
In Denver, for example, the success was based on such activity as contacting contractors, hounding them for cooperation, setting up test demonstrations and, very important, having enough equipment on hand to supply the requests quickly and without delay. There was a big job of follow-up effort after the demonstrations — helping solve any problems that developed — teaching the use of the tools — even design of a supplementary tool to the equipment.

It all boils down to applying concentrated effort and hard work to do the job, based on a real desire to get the job done.

SCPRF will do all it can, with its limited manpower, to put the Process over. But no national effort can compare with a hard-working local effort. With triple the manpower they now have, SCPRF couldn't give the time and coverage that the local people can.

And that leaves it up to the people on the local level.

Pemco custom-engineered glazes make ceramic glazing practical and profitable



Now *you* can take advantage of the production, sales and profit advantages of ceramic-glazed pipe . . . with a glaze developed specifically for your clay by Pemco's experienced ceramic engineers.

Send now for Bulletin #5008 . . . outlining the practical and profitable side of ceramic glazing. Tells how Pemco will work with you to help convert ceramic glazing advantages into profits!

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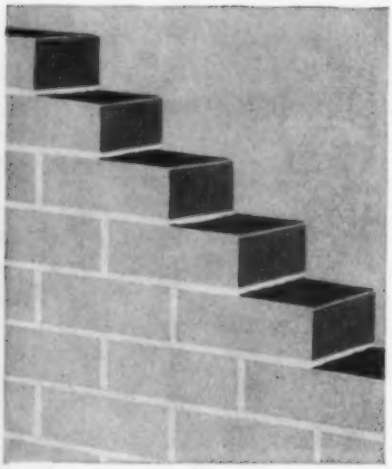
World's Largest Manufacturer of Glazes for the Ceramic Industry



COLOR

A new dimension for brick

When architects call on you for color . . . just call on Pemco to help you produce it

Pemco's Research and Development laboratories, the finest in the ceramic industry . . . Pemco's huge manufacturing plant for frits and oxides . . . means service you can depend on. Whether you know what you want and need a good supplier or whether you are in the planning stage and need assistance in developing your plans . . . call on Pemco.

Standard colors selected by the Facing Tile Institute have been matched by Pemco.

If it can be made, Pemco can match it.

WORLD'S PEMCO FINEST

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Baltimore 24, Maryland

NEWS OF THE INDUSTRY

C. H. Patek Dies

Charles Harry Patek, president of Midland Brick & Tile Co., Chillicothe, Mo., died July 8 following a heart attack.

Patek organized Midland Brick in 1935, serving as president since that time. For 15 years, prior to this, he had operated the Northwestern Clay Products Co., in Keokuk, Iowa.

Kaiser Sees Good Sales, Need for Higher Quality

The business level for basic refractories during the first six months of the current year has been "surprisingly good, considering lower rates of production by our customers," Frank M. Cashin, vice president and general manager of the Kaiser Chemicals Div., Kaiser Aluminum & Chemical Corp. said recently.

"In our case, we feel that relatively stable sales during a period of business downturn is a result of three things—maintenance of uniformity in product quality; improved delivery service to eastern customers from our Columbiana, Ohio, plant, and new applications for basic refractories," he said.

For the next six months, Cashin forecast greater use of basic refractories of high magnesia content.

"Steel and glass customers are demanding higher performance from their installed refractories, requiring refractory bodies of greater density and high magnesia content," he said.

"There has been an increase in the total market for basic refractories although the full effects may not be felt until the return of higher business levels. This increase has resulted from recognition by operators that in using basic refractories savings can be made in production because of less downtime and lower maintenance. These more than offset the difference in price between basic and lower cost materials."

He cited as an example the growing acceptance by the steel industry of all-basic construction of open hearth furnaces. Although initial costs of basic roofs are greater than silica or "zebra" roofs under optimum conditions, the actual cost of refractories per ton of steel produced can often be lower.

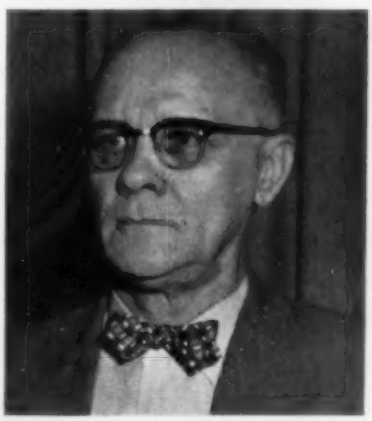
He also pointed to a considerable number of glass furnace operators who are switching to high purity magnesia refractories for construction of the entire regenerative system including regenerator ports, crowns, walls and checker settings.

"The indications seem clear that during the remainder of the year, current trends toward the proportionate use of more basic refractories will continue even though total sales of these products may not reach the record highs of 1957," Cashin stated.

C. L. Meanor Retires, Re-Elected CFLI Head

Clifford L. Meanor, assistant general sales manager of Natco Corp., Pittsburgh, retired July 15th after 46 years of continuous employment.

At about the same time the re-election of Meanor as president of the Clay Flue Lining Institute was announced.



C. L. Meanor

Other CFLI officers elected were: J. L. Clough, Evans Brick Co., vice president; Earl Roberts, Straitsville Brick Co., secretary; Philip E. Kopp, Malvern Flue Lining, Inc., treasurer.

On the board are John A. Kopp, Kopp Clay Co.; Joseph Maloney, Natco; J. W. McClave, Peerless Clay Co.; G. Tracy Price, American Vitrified Products Co.; A. R. Thorsen, Mill Hall Clay Products, Inc.; L. A. Wagner, Larson Clay Pipe Co.; Clough, Philip Kopp and Roberts.

A. F. Gibas of Globe Dies

Adam F. Gibas, superintendent of Globe Brick Co., East Liverpool, Ohio, died July 3.

Gibas had been with Globe since 1923. He was appointed superintendent in 1952.

Lavino Named Chairman, Ward Pres. of Lavino Co.

At a meeting of the Board of Directors of E. J. Lavino & Co., Philadelphia, Edwin M. Lavino, president of the company for 32 years, resigned to become chairman of the board. Russell M. Ward was elected president.

Ward, with the company since 1936, became a vice-president in 1947 and a director in 1948. He has been executive vice president the past four years.

Lavino, who succeeded his father, the company founder, celebrated fifty years with the company in 1955. He is reported to be planning to continue to take an active part in company affairs, and will continue direction over the corporation's financial policy. He will also continue in his present capacity in the subsidiary companies of Lavino.

Parker Named Controller At Refractories Division

John W. Parker has been appointed Controller at Refractories Division, H. K. Porter Company, Inc., according ot J. P. Raugh, Division Vice President and General Manager.

Parker has been with Porter's internal audit staff since January, 1957. He was previously with Chrysler Corporation as East Coast Audit Supervisor, and with Main and Company in Philadelphia. A Certified Public Accountant, he is a member of the Philadelphia Chapter, Internal Audit Institute.

Changes of Address

If you're due to change your address, be sure to avoid missing an issue of B&CR. Please notify us of your new address at least six weeks in advance of moving date. Write: BRICK & CLAY RECORD, 5 South Wabash Ave., Chicago 3, Ill. Be sure to give both old and new address, zone number, and your name.

NEWS OF THE INDUSTRY

Abel Buys Western Brick & Supply

Abel Investment Co., Lincoln, Nebr., had acquired ownership of Western Brick & Supply Co. and also Western Concrete Products Co., both of Lincoln, according to a recent report.

Transfer of ownership took place on June 12, with the price undisclosed. Western Brick is one of the largest brick firms in Nebraska. George Abel, president of Abel Investment, now also is Western president. Other officers include H. L. Sherwood, vice president; William Stoner Jr., vice president; Russell E. Eichelberger, vice president; C. W. Hansen, secretary; and G. H. Tallman, treasurer.

According to present plans, the brick plant at Hastings (one of three involved) will be shut down but the concrete plant will continue in operation. The Abel firm owns several other concrete operations in that area.

Stock in the Western firms was sold by the family of the late William Stoner, firm president who died in February. Western Brick was founded in 1892.

Pittsburgh Corning Announces New "Foam" Refractory Material

Pittsburgh Corning Corp. has succeeded in causing pure silica to boil and foam—and in so doing has created an entirely new acid-resistant insulating and refractory material.

The material has a wide range of applications in the chemical and chemical process industries as well as many areas of the metallurgical, electrical, electronic, nuclear energy, petroleum, petrochemical and aeronautical fields.

The new material, called Foamsil, is 99% pure fused silica and can neither oxidize nor absorb moisture. It is unaffected by all acids, with the exception of hydrofluoric and hot phosphoric.

The material offers continuous insulating protection and withstands thermal shock within the range of -450° F. to 2200° F. The insulating value of one inch of Foamsil is equivalent to that of 18 inches of acid brick at an operating temperature of 250° F.

The temperature range of the new material, according to Russell Brittingham, company president, is greater than that practical for any other insulating or refractory material currently available to industry.

Foamsil is now being produced in quantity at the company's Sedalia, Missouri, plant in a special continuous horizontal electric furnace. The furnace, said to be the first of its kind, was built to the company's specifications.

The pure silica, activated by a foaming agent, foams into millions of tiny, non-interconnecting bubbles. When cooled, a lightweight, rigid, inorganic block, with a closed cell structure, results.

The dimensional stability of the material is reported to be exceptioanl. It does not warp, shrink or slump during rapid temperature changes. When subjected to intense heat (such as that of a steel-cutting oxyacetylene torch) and then water-quenched, it does not crack or spall, Pitt-Corning says.

A low expansion coefficiency of 3.5 x 10^{-7}, about one-eighteenth that of low carbon steel, gives the material volume stability throughout its entire temperature operating range. For operating temperature up to 2200 degrees (F.), Foamsil actually expands whereas most insulations shrink. It has been heated in a furnace at 1600 degrees (F.) for more than two years without any evidence of deterioration.

$120,000 Construction Nearly Done at Globe

Construction of a $120,000 shop and maintenance building for Globe Brick Co., at Kenilworth, Ohio, is expected to be completed by the end of August.

The building, 60 x 120′, is located between the plant and the office.

Illinois Brick Sales Up Over 1957 Period

Sales for the 12 weeks ended July 5 for Illinois Brick Co., Chicago, were $1.46 million, as compared to a figure of $1.42 million for the comparable period of 1957. However, sales for the 1958 period from Jan. 1 to July 5 were down slightly from the 1957 period, from $2.73 million in 1957 to $2.71 million this year.

Net profit for the 12 week period in 1958 was $125,000 or 61¢, compared to last year's figures of $150,000 or 73¢.

Big Fall SCPI Meet at Shamrock

The annual SCPI meeting this fall will be held at the Shamrock-Hilton Hotel, in Houston, Tex., on Nov. 10-12.

L. R. Whitaker's Wife Dies in Car Accident

Mrs. Virginia S. Whitaker, wife of L. R. Whitaker of Carolina Ceramics, died after being fatally injured in an automobile accident on a highway in southwest Virginia in late July.

New Tunnel Fired At W. G. Bush

W. G. Bush & Co., of Nashville, held an open house in early July, including a barbeque for several hundred guests, to dedicate the beginning of operation of a new tunnel kiln.

The addition is reported to double the capacity of the original facility, completed at a cost of $500,000 in 1955. The "twin" kilns are said to be in a U-shape, connected by machine rooms, in total building area of some 565,000 sq. ft.

Rankin Given Award By BTService Members

This handsome, hand-made parchment document was presented in a surprise testimonial service July 17 to Roy Rankin of Statesville by the 20 member firms of Brick & Tile Service, Inc., the North Carolina trade association of brick manufacturers.

Purpose was to honor Rankin, who is president of the North Carolina group as well as of Statesville Brick Co., for a quarter century of personal leadership which is said to have helped the Tar Heel state earn the title "Brick Capital of the Nation."

Acme Names Distrib.

National Brick Co., of St. Louis, Mo., has been appointed as exclusive distributive representatives in the St. Louis area, according to an announcement by National president, Elmer Kempf.

Trinidad Brick Property Auctioned Off

Property of Trinidad (Colo.) Brick & Tile Co. was to be auctioned off in Trinidad in late June. Property sold included the land and clay deposits, buildings, motor vehicles, machinery, office equipment, etc. Total estimated value, including kilns and dryers, was $192,874, according to one report.

Mex-R-Co Announces Two Appointments

Mexico Refractories Co. has announced the return of Robert J. McCarthy to his post as president of their wholly owned subsidiary, Missouri Refractories Co., of Los Angeles, Calif.

Since June, 1957, McCarthy has been on leave-of-absence to organize the new Atlantic Div. warehouse operation, in Elizabeth, N. J.

Mexico has announced the promotion of William E. Daugherty to the post of District Sales Manager for southern California, southern Nevada and Arizona. Daugherty has been with Mex-R-Co since 1957, as general manager of the above-mentioned Missouri Refractories.

W. F. Groscurth Dies

Wilbur F. Groscurth, president of Owensboro (Ky.) Sewer Pipe Co., died July 18.

P. T. Davis Dies

P. T. Davis, president of Lee Clay Products Co., Clearfield, Ky., died July 19.

The death occured some 48 hours after the death of Wilbur Groscurth. Davis and Groscurth were the presidents of the only two clay sewer pipe plants in Kentucky.

Uhrichsville Holds Annual "Clayland" Celebration

A comely and talented Cambridge, Ohio, Miss Jeraldine Mae Cowgill, is "Miss Clayland of 1958"!

Miss Cowgill, 19, won the "Miss Clayland" title, plus a college scholarship from the Clay Sewer Pipe Association and the right to compete in the "Miss Ohio" finals, preliminary step to competition for the "Miss America" title, during the ninth annual National Clay Week, held recently in Tuscarawas County, Ohio, "the clay center of the world".

Miss Clay Week, Jeraldine Cowgill.

Staged by civic and business leaders, in cooperation with the many clay manufacturers located in Tuscarawas County, the annual celebration honored one of the nation's oldest and most vital industries—the manufacture of clay pipe and related clay products.

Visits to the area's clay plants, a colorful parade with attractive floats, product displays, exhibitions, and the "Miss Clayland" pageant, highlighted the week-long program centered in the twin cities of Uhrichsville and Dennison, O., the "industrial heart" of Tuscarawas County. The program attracted an estimated 60,000.

Evans Wins Prize

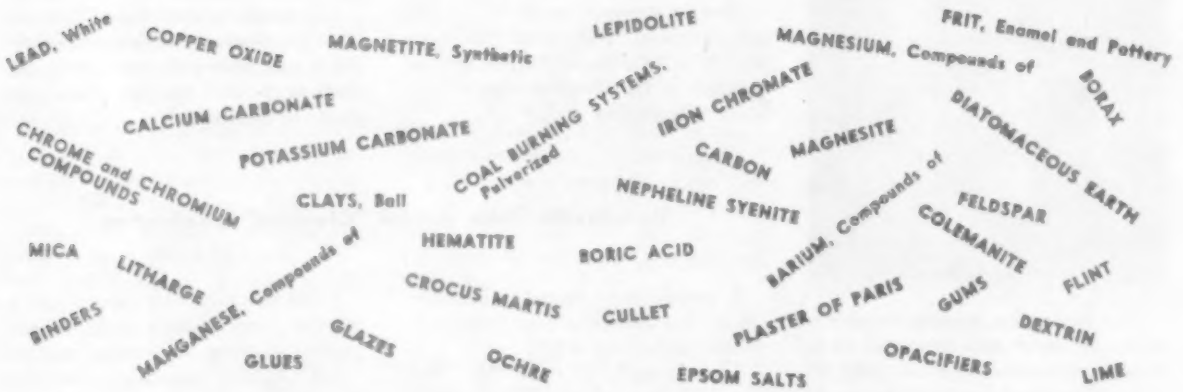
The float judged best in the giant parade and best in the industrial class was entered by the Evans Pipe Co., Uhrichsville. It utilized lengths of clay pipe to form a giant rocket, with flames coming out of the tail. The rocket was "aimed" at the "moon", which stood atop a large globe depicting the world. Shapely girls in bathing suits gave the float added appeal.

Other winners in the industrial class were Dennison Sewer Pipe Corp., second; and Clay City Pipe Co., third.

Dignitaries who attended National Clay Week included Brig. Gen. Edsel O. Clark, assistant adjutant general for air of the Ohio National Guard; Rep. Frank T. Bow, of the 16th Congressional District; Prentiss Mooney, chairman of the Ohio Economic Development and Publicity Commission; Col. Harry Richter, Ohio National Guard officer; Mayors George Gram, Dennison, and Jess Dempster, Uhrichsville; John G. Freedom, who will be Rep. Bow's opponent in the next election, and A. G. Cochran, president of the Clay Sewer Pipe Association, eastern regional association embracing 16 clay manufacturers operating in the 17 northeastern states.

Clay Modifiers Are Important!

Learn all about them in the November BRICK & CLAY RECORD



Structural Clay Products — Refractories
Clay Pipe — Lightweight Clay Aggregates

All of these are more easily and better made when the clay is treated by a modifier.

Such properties as density, flowability, lamination, scumming, strength, plasticity and many others are modified by proper chemical additions.

That's why this November "Clay Modifiers" issue is vital to you and your operation. You'll learn how barium carbonate, ammonium nitrate, sodium silicate, calcium phosphate and a total of 135 chemicals are used; what they'll do; what your results will be. Glazing and coating materials are completely discussed.

For the Supplier, this issue will be a prime opportunity to tell the industry, in a hard-hitting advertisement, that you supply the important materials used to modify and improve clay products.

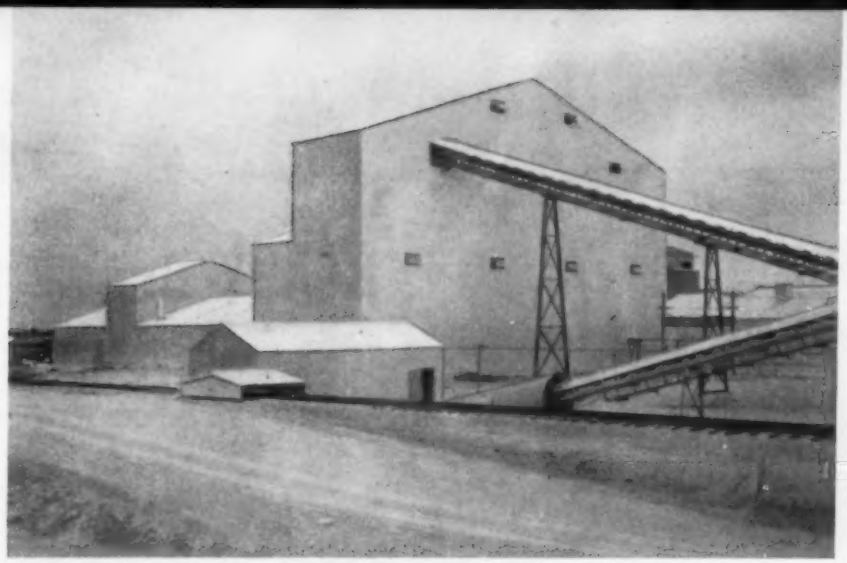
Call — Wire — Write: For information.

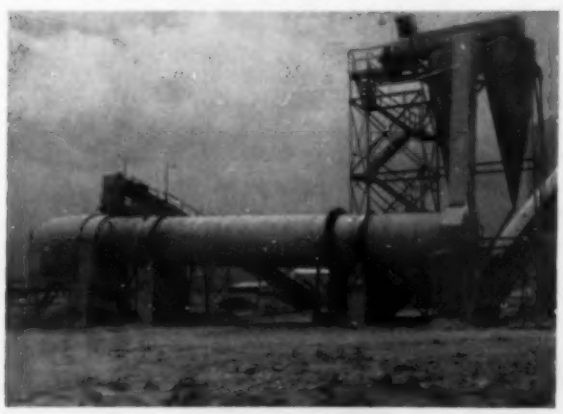
Advertising Closing Date, for Space Reservation: October 25

BRICK & CLAY RECORD

5 South Wabash Ave. **FRanklin 2-6880** **Chicago 3, Ill.**

At right is part of the new Farber plant; plant uses automation extensively.





A 60' rotary dryer is used to standardize moisture content of crushed clay at the Farber plant.

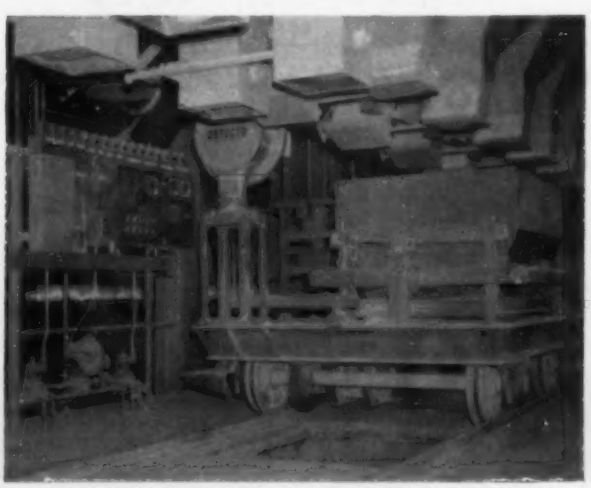
Production Begins In New Farber Plant of North American

The first car of refractories came out of a new Harrop tunnel kiln in early May in the recently-constructed Farber, Mo., plant of North American Refractories Co.

The plant is equipped for production of fire clay brick by dry press; stiff mud, hand or hammer mould process, and specialities.

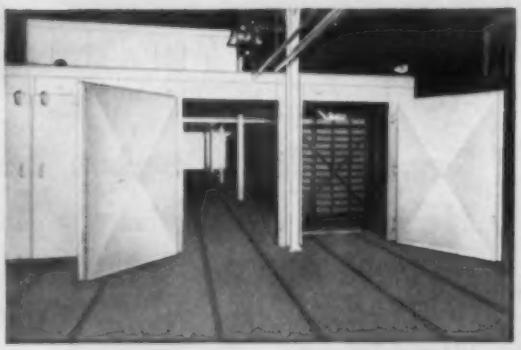
Features include storage space for 3.5 times monthly plant capacity; a separate unit for production and storage of a complete line of specialty products is under construction adjacent to the new plant.

Above is the new Harrop kiln. At right is the scale batch car used to weight ingredients.



HEAVY CLAY DRYERS

...the product and problem dictate the design

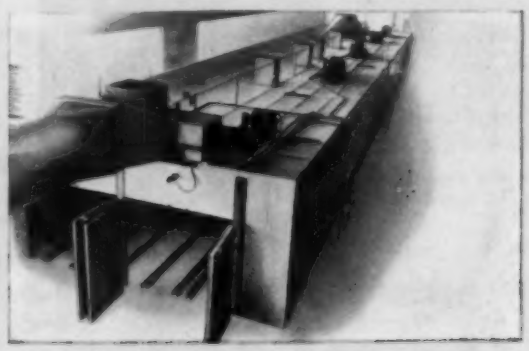


Car Type Humidity Controlled Fire Brick Dryer.

The LANLY Company's geographical location is near the heart of the country's clay products producing area. This has contributed to their 20 year acquisition of the essential knowledge and experience required to design and build the finest in heat processing equipment for the exacting varied applications in the industry.

Unprecedented competition, coupled with ever increasing costs has made it mandatory for clay products manufacturers to strengthen their relative positions in the field through the replacement of outmoded dryers. This has been accomplished in a large measure by their coordinated action with the LANLY organization.

Rack Type Humidity Controlled Refractory Dryer.



Progressive Type Humidity Controlled Quarry Tile Dryer.

Find Your Representative In The Yellow Pages

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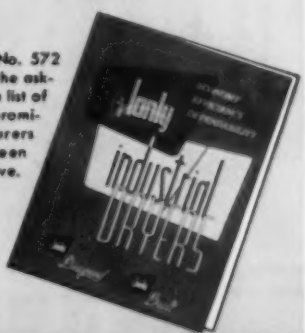
LANLY Bulletin No. 572 is available for the asking. It contains a list of some of the prominent manufacturers LANLY has been privileged to serve.



Atlanta, Georgia • Birmingham, Ala. • Boston, Mass. • Chicago, Ill. • Cleveland, Ohio
Columbia, So. Carolina • Columbus, Ohio • Detroit, Mich. • Houston, Texas
Pittsburgh, Pa. • Rochester, N. Y. • San Francisco, Calif. • St. Louis, Mo.

New $2 Million Plant Begins Production

Mica, Wash., plant highly automated, uses three stiff mud lines; makes brick, refractories

Gladding, McBean & Co. recently opened one of the most modern and highly automated heavy clay products plant in existence, at Mica, Washington.

Located seventeen miles from Spokane, Washington, the new two million dollar plant represents another giant step forward in Gladding, McBean's program to efficiently provide the major markets of the West Coast with highest quality ceramic products. Products being manufactured include face brick, refractories, drain tile and flue lining.

The new plant embraces nine rigid-frame, steel buildings covering an area of almost 200,000 square feet. These facilities include the most modern equipment for raw material preparation and the pressing, drying and firing of clay products.

The clay preparation department includes facilities for two methods of batching. The stiff mud mixes are batched by blending the various clays together and placing them in apron feeders from which they are conveyed to the dry pan for grinding. After grinding, the batch is then ready for screening. For dry press mixes, each clay is ground and screened separately before being batched by weight.

Three Stiff Mud Lines

The plant contains three stiff mud lines. One line which serves three kiln cars produces cluster Romans, standard 8-inch brick, Normans and other wire cut stiff mud shapes. Another line is equipped with two re-presses which enable it to produce, in addition to those products made on the first line, stiff mud refractories, circle brick, rotary kiln block, refractory pavers and other shapes that need to be re-pressed. These two lines feed directly to the tunnel kiln on kiln cars. Another stiff mud line has been set up specifically for the manufacture of auger-extruded flue lining and drain tile. These products are burned in the tunnel kiln and in periodic kilns.

The stiff mud operation has been designed to provide maximum flexibility. It is possible to run the same mix and shape on the first two lines at the same time. Or one color can be run on one line with another color and shape running on the other line. Each line has a daily capacity of 60,000 8-inch standard face brick, 40,000 Normans or 40,000 re-pressed 9-inch straights. It is also possible to run both dry press and stiff mud through the dryer on the same car.

Holding Chamber Protects Brick

One very important unit in the new plant is a holding chamber with a capacity of 57 cars. Mica clays are difficult to work with because they have a high shrinkage and will not dry easily. In the past, drafts striking the green brick have caused cracking before the cars reached the dryer. Now these cars can be placed in the holding chamber to keep the green brick from drying too fast, especially over the week-end when quite a number of cars must be set out of the dryer.

Two Dry Presses

Dry-pressing needs can be easily filled with the two latest model dry presses.

Refractory products being dry-pressed are Diablo brick, tongue and groove shapes for the aluminum companies, High Duty Brick and other products. Dry-pressing is also the means of making face brick including broken face Romans, cored Normans, SCR brick and the new 8-inch through-the-wall unit. These dry press units are finding a ready market in school partitions and like construction as both sides are smooth faced with no kiln marking.

Natural Gas Used

Another distinguishing feature of the plant is a 400-foot long tunnel kiln which is fired by natural gas. It is interesting to note that face brick mixes in red, buff and coral have been developed with blends of clay so that all can be fired at the same temperature. No reburning of the bricks is necessary because temperatures can be raised very rapidly in the kiln. The kiln is operated at three different cones, PCE 8 (2372° F), PCE 11 (2437° F) and PCE 14 (2548° F). Face brick is fired at PCE 8, intermediate ware and low grade refractories are fired at PCE 11 and high grade refractories are fired at PCE 14.

Readers Respond, See Great Possibilities in Burns Brick Block

Reaction from industry is favorable by wide margin; great interest shown, more details wanted, some seem ready to go into production as soon as possible.

In the July issue, under the headlines "Can Burns Brick Block Recapture Backup For Our Industry" and "How The Burns Brick Block Is Made", the editors of B&CR ran a feature story that we feel could someday revolutionize our industry.

The story, as most of you now know, concerns a new product, in a fired clay block-size unit, as developed by Henry Burns of Burns Brick in Macon, Ga. We presented the production details of the block's manufacture, along with our speculations on the probable effect this unit could have on the industry.

We've received a great volume of mail on this unit—some solicited, some purely a voluntary reaction—expressing a full range of interest in this development, with most letters showing evident favor for the unit.

To give you an idea of what our readers—prominent men in our industry—think of this unit, we this month publish several letters we've received, either in full or in part. Some names of the writers are published, some are anonymous, as the writers themselves chose:

Here are excerpts from one letter, from the South: "We are keenly interested in Henry Burns' new clay lightweight block. As you stated, this block has tremendous potential . . . the potential back-up market is *at least* three to five times greater than the face brick market in any given area."

"The architectural market will no doubt pay a premium for the brick block. Dimensional stability is a big factor in the architectural market and where low shrinkage can be proved, a premium price can be obtained.

(Editor'sNote: Just at presstime, we received word from Burns Brick about laboratory tests on expansion with wetting and drying. The figures given us were the Burns brick block had a figure of .0020, and an average medium burned brick tested at the same time had .0035.)

Continuing with the above letter, "The housing market generally will not pay more for a dimensionally stable block. This has been proved in many markets. The housing market demands a block uniform in size, reasonably uniform in texture, and all things being equal, the lowest price block gets the business.

"As to the potential of the brick block, it all depends upon the cost to manufacture.

"If the Clay Products Industry can produce a block with dimensional stability tolerances plus or minus approximately 1/16 in (competitive) cost range, they are really going to have something.

"Our first love is BRICK but we are also fond of the profits we make on block. We are watching this development closely and will go into brick block when we are satisfied with cost."

A telegram received from J. J. Junker, president of Sayre & Fisher Brick Co., Sayreville, N. J.: "Your explanatory statement concerning a clay lightweight block is a real challenge to our industry. We have just completed the largest lightweight clay aggregate plant in the country, and strange as it may seem, we are aiding the non-clay block industry in making a better product.

"If the inference (is true) that our industry can make a lightweight clay block stronger and competitive in price, there is no doubt in my mind that we can recaputre the backing market. From your operational report and our study there are a lot of problems to be solved before we can tie clay block production in with brick production. I believe there is a potential market for a good clay block."

Bill Temple, executive vice president of Denver Brick & Pipe Co., said this:

". . . the golden opportunity for the heavy clay industry. The all clay block will enable every brick manufacturer to utilize his present idle capacity and, in a very few short years, more than double his present volume.

"The handwriting is on the wall. Our industry has the raw material, most of the machinery, and the firing or finishing equipment in one form or another. What more could we ask for Markets? Yes . . . we have a market ready made for us to take.

"On top of this, our burned clay product has so many qualities which other materials cannot even approach. In my mind, any brick manufacturer who does not seize this chance to regain the backup market, and thus get more of the dollars that go into construction, has only himself to blame."

From a well-known Midwest firm: "We are very familiar with the new clay lightweight block that Henry Burns is producing. We have been producing them under test procedures for several years, and I sincerely think that they are the answer to the masonry backup problem.

"We feel that we have been progressing in our study on this and keeping pace with almost everyone in the country; however, it appears that before we consider a full-scale operation on it, another year or so will be required.

"I think one of the big advantages to the block is the fact that, in general, the capital investment required for such manufacture would be so high that it would attract only well-qualified producers and that it is not something the average small block producer can get into. It also requires more skill in manufacturing and processing, and I am sure, as a finished product, will have more appeal to the bricklayers themselves than any other type of unit . . ."

Here are the comments of John Neff, manager of the Ceramics and Minerals Dept. of Armour Research Foundation, Illinois Institute of Technology: "It was extremely gratifying from two standpoints to find the definitive article . . . featured so prominently in the July . . . issue. First to learn that a brickmaker has had the temerity to invade this ready-made market, and second, that BRICK & CLAY RECORD still is of the opinion that an all-clay unit can help regain a market that has been lost to other structural units.

"I am sure that you need no reminder that the Structural Clay Products Section of our . . . department has been extolling the virtues of this type of construction unit for more than five years. When we first publicized this development, we were struck by the apathy of the people who could profit most from it—the brick makers. If I recall our data correctly, only seven per cent of the 950 inquiries we received were from structural clay products producers. The rest of the inquiries were from architects, builders, supply yards, and government agencies.

"The only exception I might take to the article is the emphasis placed on using the unit solely for back-up. From many different clays, we have produced blocks of excellent face quality. With such desirable properties as low heat conductivity, dimensional stability and durability the block lend themselves beautifully to through the wall construction. Further, they are quite readily glazed."

A dissenting letter, from the West: "It is quite apparent that all of the economics pertaining to the production of this unit have not yet been determined, and its ability to compete with concrete units of similar character will vary between marketing areas.

"In the article, some comparison was made in the weight of the unit as compared to standard concrete block, yet nothing was said concerning units presently on the market produced with pumice, expanded shale and cinders as aggregate.

"I am hopeful of course that a market for these clay units can be developed but existing manufacturers of concrete block are not going to surrender their market without a thorough attempt to meet conditions of quality, weight and price. Even though these units may be originally considered for the back up function you will nevertheless find them used for facing purposes when all of the irregularities and imperfections will tend to create an unfavorable impression in the construction field.

"The work on lightweight units is not new and much of it has been done in reputable laboratories . . . the reason these units have not found their way to the market place is that in the opinion of the sponsors sufficient progress has not been made in perfecting a unit whose superior qualities would guarantee its place on the market for construction material."

Fenati's Coal Fired Tunnel

Coal fired Harrop is 268' long, makes 52,000 per day.

Plant uses unusual firing set-up; found how to set non-deaired brick 16 high without dunting; plant well-automated, controlled.

Unable to secure a supply of gas in its New Castle, Pa., location the Fenati Brick Co. built a coal fired tunnel kiln in 1955 and now has almost three years experience with one of the few such kilns in the United States. In use, the 268 foot Harrop tunnel has proven to be tractable, economical in fuel and produces a high grade face brick.

Not only has the company pioneered the use of coal for tunnel firing but has also solved problems of setting non-deaired brick 16 high on tunnel cars and has been able to reduce dunting to a minimum on red burning brick.

Plant Virtually Rebuilt

H. M. Fenati, owner of the plant, acquired the site and limited production facilities in 1940 and since that time has virtually replaced all of the equipment while more than tripling the capacity of the plant. Built in 1922 the plant had ten coal fired periodics and machinery with 30-40,000 brick a day potential. Following the war plans were made to gradually increase this potential while maintaining the unusual flexibility of the operation.

The tunnel kiln was designed and built by Harrop with the late G. C. Porter acting as consultant on the coal firing ovens. Other than the coal firing system, the kiln is quite like others of the same general size. The twin track dryer is 84 feet long and holds a total of 28 of the 8 x 7 foot tunnel cars.

Using heat from the cooling section of the tunnel the dryer is equipped with five fans. One is located on the exhaust, one on the intake and three are used for recirculation in the dryer. It is possible to control both entering and exiting air, the temperature drop through the dryer, as well as the relative humidity.

It was observed that on the cars set ahead of the kiln for firing over the weekend the green brick were deteriorating in quality before entering the controlled conditions of the dryer. A still chamber was constructed in front of the dryer that would hold an extra 12 cars. The conditions of atmosphere are controllable in that humidity can be regulated and the room kept warm with little circulation. The conditioner has resulted in improvement of drying to a marked degree. The still room, being subject to no extremes of conditions, was constructed over storage tracks with cement asbestos board and frame. Cars are pulled into and from dryer with cables with winch drive.

The tunnel kiln, 268 feet long, is charged through an air lock guillotine door to prevent changes in air flow in the kiln during charging with the first car space being locked off by the vertical operating door all the time the charging door is open.

With 33 cars in the kiln the minimum firing cycle is just under 48 hours, when the kiln is operated at a 52,000 brick a day rate. This rate is as high as the kiln has produced on a sustained schedule and is reached with a charging schedule of one hour and 35 minutes. Each of the kiln cars carries 3,000 standard size brick set 16 brick high.

Car pusher is a Denison hydraulic with a continuous chart kept on pusher pressures. Cars are standard with Sanford-Day bearings and Paco tops. Originally 99 cars were purchased with roller bearings and one, as a test, with ball bearings. Later as the schedule was improved 20 additional cars were required and these were ordered with the ball bearings, as the test car had proved to be distinctly better in this plant. Bearing lubrication with 20 weight Pure Vislube has proven to be satisfactory.

Fans Are Standard

Circulation in the kiln is maintained with two recirculation fans, the exhaust fan and the cooling zone exhaust fan which discharges into the dryer air supply system. All fans on the kiln and dryer are by Robinson Ventilating, the same types as used on oil or gas fired kilns.

Firing with coal is much the same as any other fuel as far as results are concerned but the application of the heat to the brick is quite different. The furnace section of the kiln is over 80 feet long. Ten stoker equipped fire boxes are on each side of the kiln.

The 20 boxes are 8 feet from front to back and 6 feet wide with a floor at the same elevation as the tops of the tunnel kiln cars. The sides and front wall of each fire box are built of fire brick and red brick on the outside.

There is no wall between the kiln and the fire box, the entire area being open from side to side and from the hearth line to the top of the box which is 4½ feet. The arches over the openings are six foot monolithic poured in place with refractory concrete made from fire brick grog and Lumnite cement.

A standard household type coal stoker, manufactured by Canton Stoker, is installed in each fire box. The units have not been altered in any way for this duty with the exception of the hopper which was made slightly heavier. Coal after being dumped into the hopper of the stoker is conveyed under the fire box through the screw conveyor or feeder and rises in the center of the fire box.

When the stoker is running, combustion air is furnished by the stoker just as in household use. When the automatic controls of the kiln shut down the stoker air flow through that stoker halts.

Stoker Controls

Control of each stoker is maintained by a battery of 20 Foxboro controllers. Through experience, a temperature setting for each oven has been determined that is required to produce any given firing temperature and curve in the furnace section of the kiln. When brick of different material come into the kiln the firing curve is changed to accommodate that material.

Maximum firing temperatures run from 1950° to 2150° depending on whether red or buff brick are in the kiln.

20 Control Points

With 20 control points on the kiln, control is very accurate. The controllers operate on a 10° temperature variation and since the operation is intermittent and irregular some stokers are running while others are off. Seldom, if ever, are all of them on or off at the same time.

Actual firing temperatures are so even that fluctuations are not shown on any of the 13 couples installed in the crown of the kiln. Deviations from the desired firing curve are corrected with minute adjustments of the effecting stokers with compliance being made in a slow drift.

Couples are also located on each recirculating fan, the stack and in two places under the kiln cars as a check on the operating temperatures in these sensitive areas.

Coal, crushed to stoker size is purchased from local mines and received, on the hill overlooking the plant, in a 60 ton bin. From there it is a short gravity trip through tubes to a loading station on each side of the kiln. A basket on a monorail is loaded from the tube and the individual stoker hoppers loaded from this.

Closeup view of stoker units used. Only change made was to make heavier hopper. Stokers are hooked to Foxboro controllers.

Firing requires little time or effort but the boxes must be cleaned once a day. With 20 boxes to be cleaned, each shift takes care of seven every day. Ashes are moved from the kiln area and loaded into a dump truck for disposal. Two men per shift are used in the tunnel section of the plant to fire the kiln, clean boxes, charge and draw the kiln.

Some 400 to 600 lbs. of coal per thousand brick are required when the kiln is in operation and, of course, the greater the production the better the fuel economy.

After firing, brick are set on wooden pallets for transfer to storage or delivery. The roofed unloading area is removed from the kiln building and the dock is car top height with paved access so fork trucks can efficiently handle brick pallets.

While the coal fired tunnel is of high interest, problems associated with plant site and product mix of the company required unusual solutions not usually encountered.

Problem #1 was the difficulty of fitting the long building housing the tunnel kiln, dryer and car loading station on the site so that the existing mill room could be used in conjunction with the additions.

Problem #2 was the high percentage of non-deaired brick produced by the company that would not bear the weight of 16 brick while green without serious dunting. Since setting direct on tunnel cars was desired this problem had to be solved.

Space was made by cutting into the base of the hill overlooking the plant and delivery of green brick is handled with a 170 foot conveyor belt that runs to the car setting area. Car setting is from the side of the car with the near side being set from the belt running from the mill room. The far side of the car is set from the belt running toward the mill room on the far side of the car. Green brick move in an "U" shaped path around the setting area over the offbearing belt, the transverse belt and the return belt.

Hack in Two Steps

Dunting of non-deaired brick is prevented by setting the first 8 courses, partial drying and then setting the last 8 courses. The predryer holds 11 cars at one time and has a low cross section to accommodate the 8 brick setting. Heat for the predryer is taken from the dryer hot air supply. Some cars are top set in the afternoon that were bottom set during the morning. Six hours has been found to be the time required to harden the setting enough to take the full load.

The offbearing belt drops in a long slant so that offbearers always find a place where the belt height and stacked car height is about the same. When the top setting is finished, cars are moved with transfer car to the still chamber for holding or to the dryer for drying and firing.

The coal fired tunnel was the culmination of a program at Fenati. Several steps were first taken before the millroom, pit and grinding capacity were great enough to support the production of the tunnel in addition to the 13 periodics which are still used.

One of the first steps taken was the replacement of the grinding and raw clay storage with equipment of greater size. At the present time, the company brings clay and

(Continued on next page)

FENATI Continued

Line #4, the older of the two, is set up with a FRH Jr. shale from the pits located on the 300 acre site over the ½ mile haul road with dump trucks that are loaded with Lorain shovels. When producing at capacity of 120,000 brick a day, two five yard dumps are needed to maintain ample supply of raw material.

The coal associated with the buff burning clay has been mined out but, when available, was uncovered with a 2½ yard Lima dragline and was used in the plant as a significant portion of the fuel used. As the buff burning clay is removed, a strata of high grade limestone is left uncovered, which represents a valuable asset in the iron and cement producing New Castle area.

Crushing and sizing has reached a high level of efficiency, being made largely automatic and done with minimum labor. The trucker dumps into a hopper over an apron feeder working into a Stevco single roll disintegrator.

The preliminary size reduction is controlled at the remote location from a panel from which the initially sized material can be routed for storage or use. After dumping his load, the trucker activates the crusher which is set to run four minutes, which experience has shown to be ample to crush the five yards of clay. From the single roll crusher the sized clay moves over a 137 foot conveyor to storage.

Four Storage Bins Used

Storage has been provided in four bins housed in a 100 x 40 foot clay shed. Located 24 feet over the floor of the bins an oscillating clay tripper moves to a position over the proper bin on signal from the control shack located at the preliminary crusher. When indexed to the correct bin, the tripper oscillates over a ten foot range to distribute the clay over the entire area of the bin, helping to insure a well blended raw material.

The conveyor discharging from the preliminary sizing grinder is also set up so that the raw clay storage area can be bypassed and clay discharged directly to bins set over and feeding the two drypans used for final grinding.

These pans, a nine foot Stevenson and a ten-foot Bonnot are fed with reciprocating feeders. The drypan surge bins are also loaded from the clay storage shed with an International crawler with front end loader.

Four Standard Blends

Blending of red and buff material is managed so that four standard blends are maintained in the clay storage area at all times. Two of the bins are filled with straight mine run of the red burning and the buff burning clay. The other two bins are filled with mixtures of the clays in different proportions that have been found to give a series of warm intermediate colors much in demand by customers.

Apron conveyors carry the discharge of the dry pans to separate screens. Because mining methods and storage capacity are such that raw material is kept dry, the capacity of the dry pans is high and screening can be done with stationary non-heated screens. Screen size is 4 x 10 feet set at about 45° and the screen material itself is a Tyler elongated slot perforated screen.

Tailings are returned to the dry pans for further grinding while that material passing the screen goes directly by gravity to feed bins set over the brick machines.

The machine room includes a double set up with each line operating independently and provision has been made so that production from either machine can be diverted to the periodic kilns.
combined and deaired brick machine driven with a two

Line #1, the older of the two, is set up with a FRH Jr. cycle six cylinder 160 H.P. GMC diesel geared down to 500-550 RPM from the engine speed of 1,000-1,100. Primary drive is through vee belts. This line is the one used for production of tunnel kiln brick primarily but can be used for periodics. Brick after being cut on a Steele #18 go to the 170 foot offbearing belt which carries the brick to the setting area for the tunnel kiln.

Line #2 is driven with GMC twin-six two cycle diesels developing 185 H.P. and running at 1,000 to 1,100 RPM. These engines, like the first, are geared down to half speed before the power is transferred to the shaft of the FRH senior by vee belts. Cutting is with a Steele as on line #1.

All production from this line is set on standard single deck dryer cars for drying before being set in one of the plant's 13 periodic kilns. Fired like the tunnel kiln with coal, the periodics are all 32′ in diameter.

The diesel power on the brick machines offer several advantages in this operation. Being the major intermittent load, the elimination of the usual electric motors for this service results in power cost savings greater than the actual reduction in power used. Savings, because of the low cost of fuel oil and upkeep of the power packs, returns their cost in less than three years.

Diesel Powered Machines

In practice it proves convenient to vary the motor speed within limits to adjust the speed of the pug mills and brick machines to the best speed for the particular blend of clay and the conditions of vacuum under which it is being extruded.

A large part of Fenati production is in brick textures which are impossible to make with low deairing pressures. This affects the optimum speed at which the brick machine and texturing machines perform the best.

Periodic firing is to the same temperatures as in the tunnel, running from 1950° for the red burning material to over 2150° for the buff. Hand set, the periodics are emptied by wheelers who build 350 brick hacks on wooden pallets for subsequent handling. The storage area is worked with fork trucks; at peak production six are used, all equipped with standard forks.

The wide range of production runs from white through buffs and browns to red and flashed red colors including black. One of the most popular brick is a sanded texture that is applied wet to the green brick, resulting in a hard and tight fit. In addition to the sand finish, two bark textures are in regular production as well as three vertical, a smooth and a pebbled textured.

A new laboratory under the supervision of the ceramic engineer, Robert Culley, has just been placed in service. The wide range of colors and textures has multiplied normal raw material control problems to the point where the laboratory became necessary. Day to day operations are under direction of Ralph Steve, superintendent.

All sales are through agents with shipments made by both rail and customers' truck. With a long history of making what the customer wants, Fenati Brick wants to implement this policy with better tools and new techniques.

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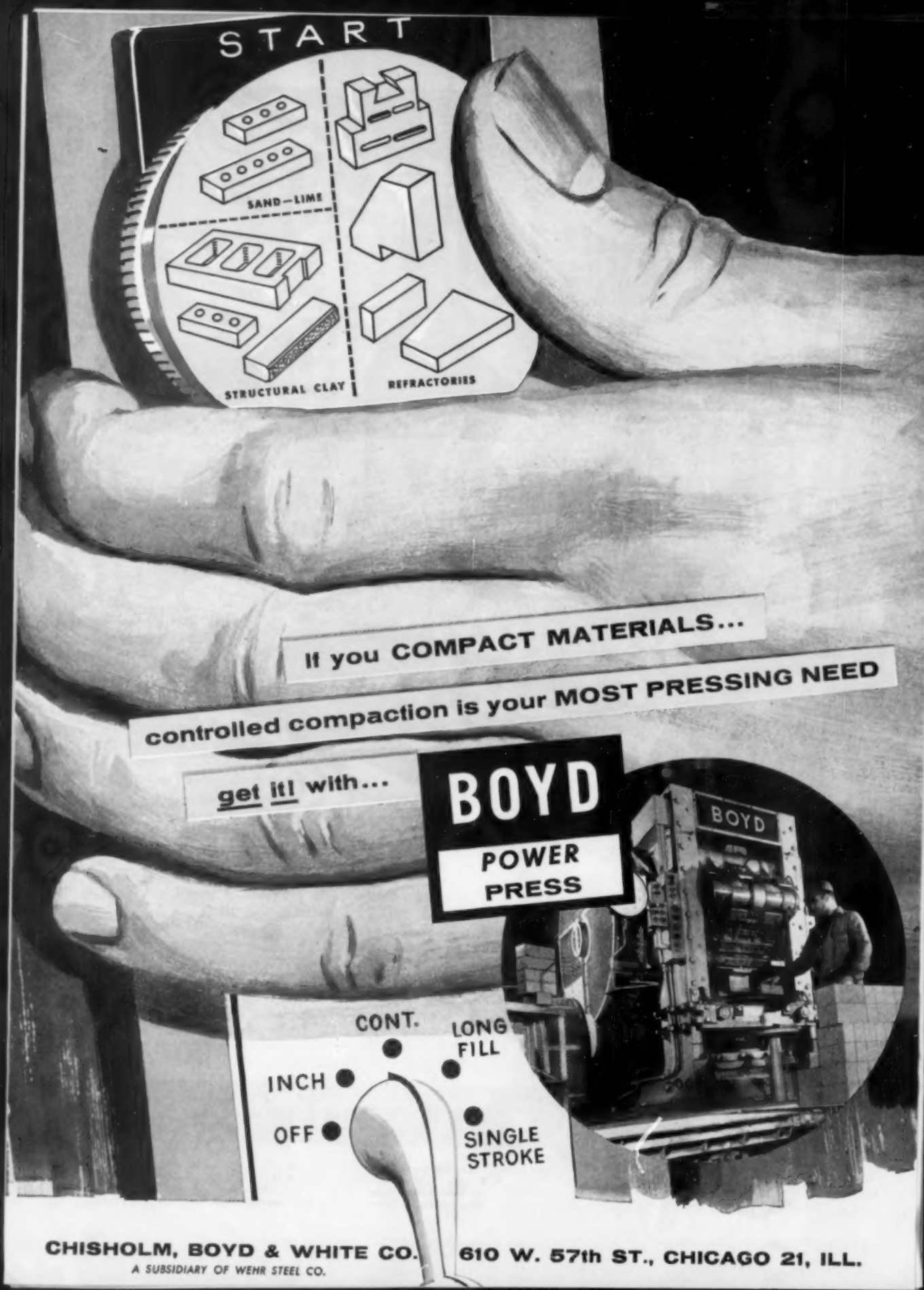
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Above is an overall view, at night, of Moss Landing. Tall structures are product bins.

Kaiser Chemicals

An overall look at a 15-year old division that's expanding steadily, producing varied line of refractories

If you go by tradition, you would expect that a basic refractories producer whose sales are principally to the steel industry, would have started its business in the East and perhaps spread westward. But Kaiser Chemicals threw away the script and began producing first in California and then spread eastward.

This unorthodox approach to selling the steel market was dictated by circumstance rather than design. But despite what may appear to have been an initial handicap, the Kaiser Chemicals Division of Kaiser Aluminum & Chemical Corp. is now firmly entrenched as an eastern supplier of quality basic refractories with a plant at Columbiana, Ohio, and maintains its grip on a lion's share of the western market for its products.

The western facilities were constructed early in World War II to furnish high purity magnesium oxide for the production of magnesium metal. A dolomite calcining plant was built northeast of Salinas, California, backed against a good-sized hill of ore. A seawater magnesia plant was built 15 miles away at Moss Landing on Monterey Bay.

Crash Research Program

The move into the basic refractories field was a natural one, but was actually precipitated by shortages of these products in the West caused by wartime transportation difficulties. Starting with the need and the raw materials, a crash research program was established to design a whole line of basic refractories literally from the ground up.

In 1943, the company acquired a small ceramic tile plant at Milpitas, Calif., and converted it to making refractory brick. Expanded and modernized several times during the intervening years, the Milpitas facilities today constitute one of the nation's largest and most complete laboratories devoted entirely to basic refractories research.

The Division's present West Coast basic refractories plant was built next door to the seawater MgO facilities after the war when the company entered the refractories business on a major scal.

Built Eastern Plant

Despite the obvious difficulties in trying to penetrate an eastern market with West Coast production facilities, Kaiser Chemicals' eastern business grew to the point where it became feasible to construct a new plant to handle the current business, to do a better marketing job in the Midwest and East, and to be ready for further expansions when needed.

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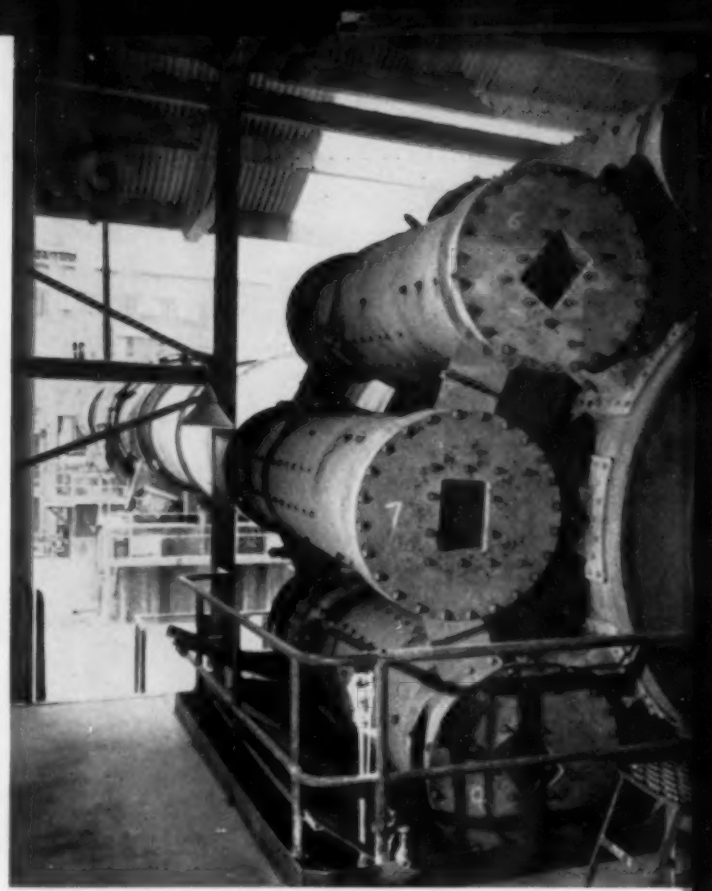


Constructed in 1955-56, the basic refractories plant at Columbiana, Ohio, is well situated with respect to the market it serves. Columbiana is about 15 miles south of Youngstown and 55 miles west of Pittsburgh. The plant is located on the main trunk of the Pennsylvania Railroad, is within overnight trucking distance to most eastern steel centers and only two days by truck from Chicago or Birmingham.

"We took a long, hard look at a number of locations before settling on Columbiana," says Frank M. Cashin, vice president and general manager of the Division. "We felt that Columbiana offered us the best possible combination of factors necessary to a successful operation. We haven't been disappointed."

Columbiana Plant

Initially, the plant was constructed at a cost of $5,000,000 and was expanded to an annual capacity of 100,000 tons in 1957. Furthermore, the plant can be expanded almost indefinitely.

"In our present building we can accommodate two more presses without any difficulty," says Joseph F. Knight, manager of operations. "With alterations to the building and the addition of the necessary materials handling equipment, we can add as many more presses as future business may warrant."

This location has paid off handsomely during the lower business levels which have prevailed during 1958. In line with the policy followed by most of the steel industry in keeping inventories at a minimum, the time factor in deliveries has become extremely important.

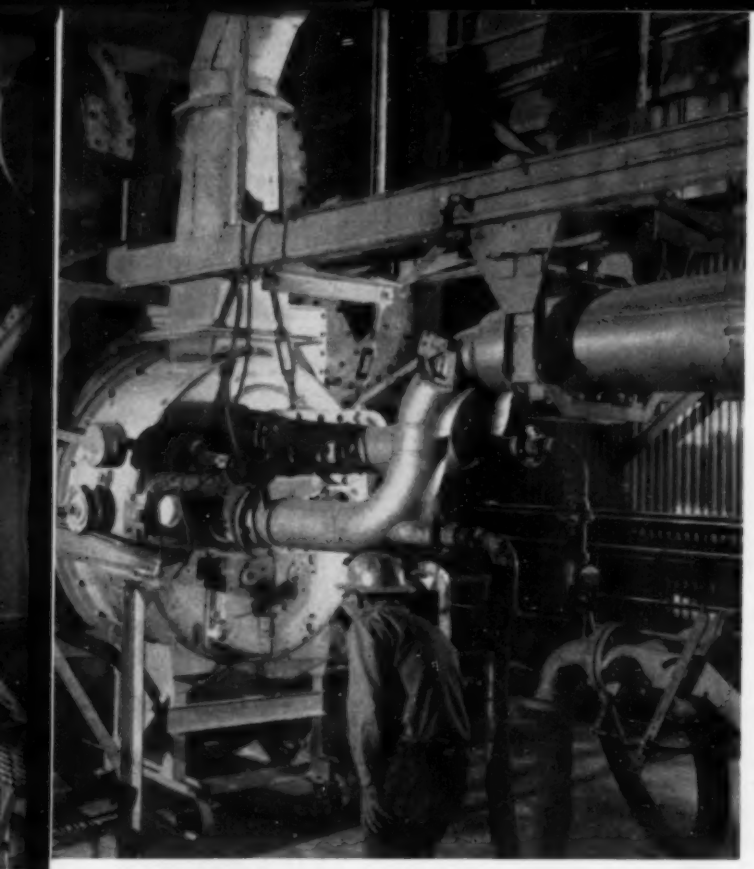
"We feel that our location has had a great deal to do with building new business and new customers in the eastern market," says R. T. Drennan, general sales manager.

Kaiser uses extensive quality control measures; in typical day, more than 750 quality determinations are made at 150 check points.

New Periclase

Another factor, its officials believe, has been the pioneering in producing basic refractories of high magnesia content. Back in 1946, research efforts developed "green grain" Periclase, low in silica and over 95% MgO. At about the same time, a magnesium oxide bond was developed, which, in essence re-crystallizes the magnesia to form a continuous, dense homogeneous mass at relatively low temperature.

From these developments, Kaiser Chemicals introduced its "D" series brick and Permanente 165 ramming mix. Cashin feels that the trend toward using higher purity magnesia



Rotary kilns are used at both Natividad and and Moss Landing plants with three at each.

in basic refractories has never been more apparent than it is today.

He says: "Steel and glass customers are demanding higher performance from their installed refractories. This means higher magnesia content and greater density."

In addition to the magnesium oxide bond used in the low silica Periclase products, Kaiser Chemicals uses a magnesium orthosilicate bond for its 92% MgO Periclase products. The principal ingredient is amorphous volitized silica. The re-crystallization starts at low temperature to form a forsterite before the complete loss of the chemical bond and provides a stable and highly refractory brick with good intermediate and high hot load strengths. Both the MgO and forsterite bonds are formed by solid phase reaction, eliminating the weak, liquid phase.

Gunning System

Another major development has been the K/R (Kaiser/Refractory) gunning system. Although gunning systems for the pneumatic placement of furnace grains is open hearth furnaces is not new to the steel industry, Kaiser Chemicals officials report considerable success with a new type of gun which can be operated on a continuous basis instead of the batch methods formerly used.

The gun uses dry mixes which are fed into two hoppers which supply the unit's main reservoir. Water is added at the nozzle and the material is shot at 40 psi through a 1½" lance.

The gun is lightweight and portable and can be folded by means of pivots to a maximum height of 23" to permit clearance of the charging machine. Material is gunned at a rate of 240 pounds per minute without pulsation or interruption.

Two specially designed mixes are used with the gun. K/R 165 is used for tap hole maintenance and open hearth bottoms while K/R 95 has neutral characteristics which make it particularly adaptable for application above the slag line.

For use in the hot zones of cement kilns, Kaiser Chemicals has developed the Unitab kiln liner which features preformed steel shims and single cardboard spacers attached to the brick prior to shipment. The steel shims are formed in the shape of an "L", covering one side of the brick and about half of the hot face.

(Continued on next page)

Tunnel kiln burns brick at temperatures about 2500 F.
BCR did full story on Columbiana plant in November, 1956.

The principal advantages of the Unitab kiln liner are simplified handling which reduces installation time as much as 50% and the overlapping shim on the hot face of the brick which aids in building up the coating quickly with a variety of kiln feeds.

The production of basic refractory products begins at the dolomite quarry at Natividad. The rock is mined by electrically-powered shovel, loaded into specially built 25-ton dump trucks, and hauled to the primary crusher where the rock is crushed to minus 5". The material is passed over a screen and the minus 3/8" material, which is largely decomposed granite, is sent to the waste pile.

Media Separation Unit

During the early years of operation, selective quarrying was necessary because the quarry contains intrusions of siliceous material. In 1951, however, a heavy media separation unit was installed for beneficiating the rock prior to calcination.

This unit handles up to 300 tons of rock per hour passing for calcination the rock with a specific gravity of 2.78 or over. The bath itself is a ferrosilicon-magnetite suspension, the density of which is maintained within .02%. The separation rejects the lighter siliceous material. The resultant kiln feed is less than 1% SiO_2.

Under normal operating conditions, two of Natividad's three kilns are used for calcining the raw dolomite which has been further crushed and ground to predetermined sizing. The third kiln produces deadburned dolomite with the addition of specific amounts of mill scale to the kiln feed. Calcined dolomite is produced with kiln temperatures of about 2800° F.

Moss Landing Plant

The calcined product is shipped by 25-ton truck to Moss Landing for reacting with treated seawater to produce magnesium hydroxide. At Moss Landing, seawater is pumped into hydrotreaters where small amounts of calcined dolomite are added for removal of carbonates.

In the reactor system, calcined dolomite is introduced to the treated seawater to precipitate the magnesia contained in each. Calcium chloride and other unused, harmless chemicals are returned to the ocean. The slurry of magnesium hydroxide is fed through a series of five 250′ torque thickeners and washers.

F. M. Cashin
Vice President
General Manager
Kaiser Chemicals

A counter-current of treated fresh water washes the hydrate which is then pumped through 14′ by 18′ vacuum filters. The resulting product is filter cake which contains over 50% solids.

Expanded Periclase Output

In 1957, Kaiser Chemicals completed an expansion program at the magnesia plant which doubled the capacity of the wet system and increased its ability to produce Periclase by 50% with the addition of a third rotary kiln. The total kiln capacity now is about 400 tons per day, making the plant the largest seawater magnesia facility in the world.

Periclase and refractory grade chrome ore, shipped in from the Philippines, are the two major ingredients for the basic refractories produced at Moss Landing and Columbiana. In addition to these raw materials, various bonding agents are used. A chemical bond is used to give moderate strength to dried brick while the ceramic bond is set by firing either at the point of manufacture or on the job in the completed bricked structure.

The chromite is crushed and both the chromite and Periclase are screened and stored according to size. Mixing of the ingredients follows formulae developed for each of the various types of brick and ramming mixes.

In order that maximum density can be achieved, each formula provides for a variety of particle sizes. The ingredients, including the bond-agents, are combined in 3000-pound batches and weighed into muller type mixers.

In the base of brick, water containing the chemical bonding agents, is added and the mixture is pressed at 10,000 to 12,000 psi into a variety of sizes and shapes to suit customer needs. Like Columbiana, the Moss Landing plant has three presses.

Certain brick shapes, which are not suitable for making in a press, are made from special formulation and cast into the desired mold by a shaking process.

Drying And Firing

Bricks just off the press are placed on a drier after a quality control survey to assure product density, size and weight. All brick are then run through a tunnel drier to set the chemical level and to remove excess moisture. The high chemical bond strength assures shipment on pallets by rail or truck without breakage.

Unless bricks are shipped chemically bonded, a tunnel kiln is used to burn the brick at temperatures of about 2500°F. This sets the ceramic bond and the bricks become volume stable.

For many uses, brick are shipped encased by thin sheets of steel and attached to the brick (Unitab is one example.) The cases may cover two, three or four sides of the brick depending upon customer requirements.

Color Coded Brick

All bricks are color-coded to permit positive identification. Because of the high bulk weight of the bricks and sacked ramming mixes, special precautions are taken in palletizing and loading to prevent damage during shipment.

Kaiser Chemicals pays particular attention to quality control, starting with rock quarried from Natividad through the finished product. In a typical day, more than 750 quality determinations are made at over 150 check points.

PacClay Makes Strong 2nd Quarter Recovery

Pacific Clay Products made a strong recovery in the second quarter of the current year from the low level of operations to which it was held by severe weather conditions in the first quarter, President John D. Fredericks announced in a six-months report to shareholders.

Reflecting the improvement, Fredericks said, second quarter sales were $2,583,792 compared with $1,875,541 in the first quarter while net income increased to $329,131 from $168,395.

For the six months ended June 30, 1958, net sales and other income totaled $4,459,333 compared with $4,530,097 for the same months of 1957. After all charges, net income in the first half of this year amounted to $497,526 equal to 96 cents per share on 516,428 shares of capital stock outstanding. Net income for the corresponding months of 1957 totaled $670,443 or $1.30 a share on the 515,882 shares then outstanding.

The unusual rainy weather and subsequent unsuitable ground conditions for the installation of sewer pipe depressed shipments in the first three months and into the second quarter as well, Fredericks stated.

Beginning in May, however, shipments accelerated sharply and in June alone, sales of Pacific Clay Products exceeded $1,000,000, a new record, he said.

Gladding, McBean Reports Improved Sales, Earnings

Gladding, McBean & Co. second quarter sales and earnings showed improvement over those of the first quarter, it was announced by C. W. Planje, President.

Sales volume for the second quarter was $7,216,000 compared with $6,489,000 for the prior quarter and $9,035,000 for the second quarter of 1957. Total sales volume for the first six months was $13,705,000 compared to the record sales volume of $17,502,000 attained in the similar period of 1957.

Net income for the quarter ended June 30 was $326,000 or $0.21 per share compared to $211,000 or $0.13 per share for the first quarter 1958 and $896,000 or $0.56 per share for the second quarter of 1957.

Net income for the first six months of 1958 was $537,000 or $0.34 per share as related to $1,716,000 or $1.08 per share for the comparable period in 1957.

Planje told shareholders that there were two principal reasons for the reduced earnings in the first half. The first was a higher unit production cost resulting from reduced sales volume. The second was the absorption of high start-up expenses for new plants at Corona, California and Mica, Washington.

Planje stated that both of these units are now operating satisfactorily. "The high degree of mechanization replacing obsolete production methods should contribute materially to the company's operating efficiency," he said.

Planje views the remainder of 1958 as a period in which sales and profits will increase with the indicated improvement in general business conditions. He feels that Gladding, McBean & Co.'s sales and earnings for the second half will be substantially better than those reported for the first half.

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Superlite Unloaders **DON'T COST — THEY SAVE!**

Galena Saves Time, Work With Own-Design Conveyor System

Portable package line uses jig, has cover to allow bad weather operation; five man crew can package 45,000 per day

Customer demand has resulted in a packaging program by Galena (Ohio) Shale Tile and Brick Co. that is centered around a company designed conveyor system that eliminates much of the time and work required to package brick in 100 packs.

The heart of the operation is a portable packaging frame that consists of a conveyor, transit pallets in a limited number and a swinging jig that forms a two sided box for the fabrication of 100 packs and yet swings out of the way when a group of three packs are completed and need to be advanced.

Portable Packaging Frame

When an order is received at Galena for packaged brick, the brick needed for filling the order are noted and the packaging line is moved into the area in which the ordered brick are stored.

As Galena maintains a large storage yard to handle the problems associated with the production of a great variety of sizes, textures and colors the managers felt that the portability of the packaging frame would result in worthwhile savings by reducing the transportation of brick to be packaged.

The machine was built on a frame of "I" beams 18 feet long set about 30 inches apart. After the frame was made into a rigid box, conveyors were set on top of the beams and the positioning jig was located on the front end. To finish the project a steel awning frame was constructed so that during bad weather or in the summer the workers at the machine would be protected from the elements.

The system requires the use of transit pallets which actually form the top of the conveyor system; the packages do not incorporate any permanent pallet.

Stored On Wood Pallets

At Galena all brick are stored on the yard on wooden pallets each holding 800 brick. These pallets are loaded in the kilns or at the unloading area of the tunnel kiln and moved to yard storage with large capacity fork trucks.

Using a fork lift, the 800 brick pallets of loose brick are placed at the loading end of the packaging machine so that the packers will have the shortest motion possible. A transit pallets is placed in the jig and the packers tong brick into the proper pattern. This pattern consists of three packs on each pallet, eight rowlock courses, and one header course on top.

(Continued on next page)

Protective paper, 24 x 6" is placed on the bottom corners of the packs before the loading is started fork spaces are left in the third course from the bottom.

To maintain the space, a layer of paper is put between the third and fourth course with the fourth course brick adjusted to form a lintle over the fork opening. The pack actually contains 99 brick as now made instead of 100.

When the three pack group on the transit pallet is completed, the jig is released from its locked position and swung on hinges out of the path of the conveyor. The hinged portion includes both sides of the jig. When swung outward the packs are free to move down the conveyor to the strapping position.

Gravity Moves Package

When set up, the packaging machine is tilted so that gravity works to move the three pack group toward the discharge end with only a slight boost from the operators.

The transit pallets are constructed so that a slot falls beneath the center of each pack of brick, allowing the steel strap to be pushed through easily. Before drawing the strap tight and sealing, the operators place a sheet of paper on the top corner of the three pack group which, like the bottom paper, ties the three packs together.

Galena Shale is still experimenting with different kinds of paper for this use to determine the best suited. This paper cast in two ways, one to cushion the steel strap where it bends around the corner of the package, and to tie the three packages on each pallet into one bundle that can be handled with a fork truck.

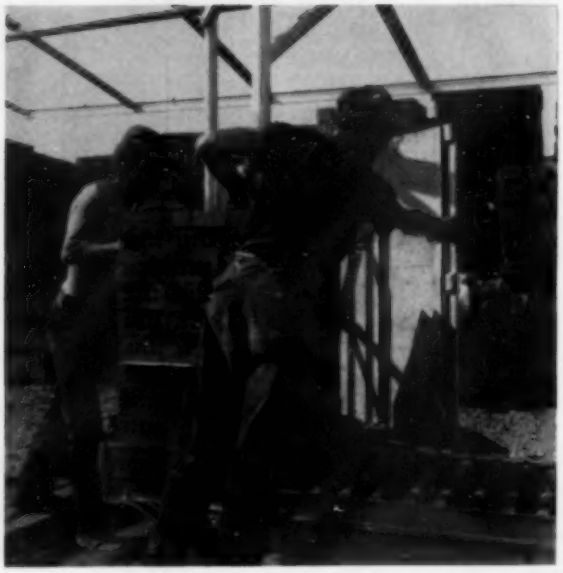
Operation Is Flexible

The flexibility of the operation is such that a considerable variation is possible in the number of workers assigned to the packaging operation.

If two men are used, the line is filled up. Then the two men, working as a team, strap the complete line and one worker then moves the strapped packages to the holding area until truck space is available for delivery. Meantime, the other man can set brick into packages and return the transit pallets to the front end of the machine. If more production is required than can be delivered by two men, additional personnel can be assigned with a direct increase in productivity.

Mingles Easily Done

Strong points of the system include the ease in which mingles can be made according to any desired mix. As there is room for at least four 800 brick pallets at the loading end of the line, four colors could be blended into the shipping pack with no loss of productivity.



Jig swings out of path of package; unit moves down by gravity over conveyor.

In the old manner of loading at this plant, the pallets of 800 brick were set on trucks from the pallets by hand so the handling of brick for the 100 pack does not increase the manual handling of the brick. The added labor is the strapping operation and the fork truck time required to move packs from the machine to trucks or the holding area.

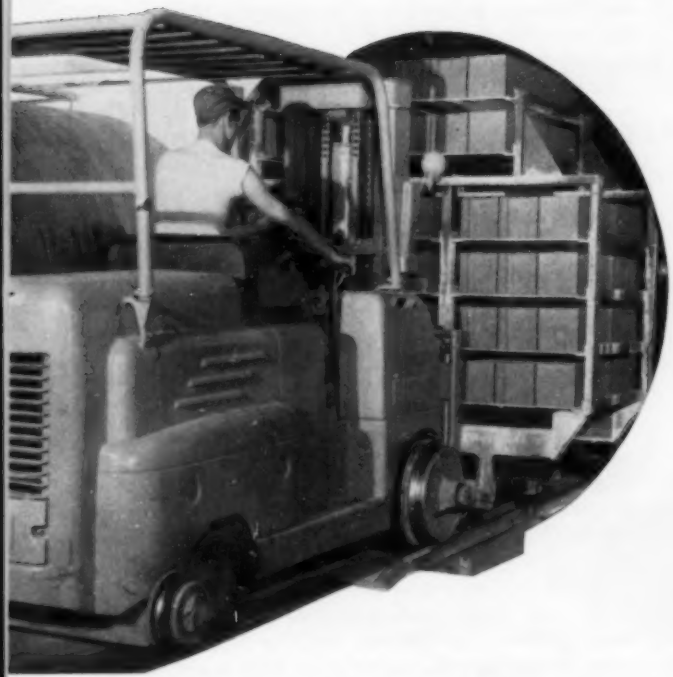
Packs, when moved from the strapping line, are moved with the standard fork truck to the assembly area and stacked three packs high. As soon as a truck is ready for loading the packs are placed on the truck in a manner of minutes reducing the lost time of the truck and in effect increasing the hauling capacity of the truck fleet.

Contractors Use Tractors

Contractors requesting the pack are equipped for unloading the triple pack unit on the job site with tractors equipped with forks and this eliminates the delay associated with unloading brick from the truck by hand, further increasing truck utilization.

The 99 brick units can be separated from each other and the pack moved to the brick layer with simple hand trucks as the weight is only 4-500 lbs. With a production of 15-18,000 brick a day, when operated with two men, the estimated potential of the machine on an eight hour schedule and a five man crew is 45,000. Galena Shale Tile and Brick is using Signode strapping for this operation and a manual operated magazine fed combination sealing tool. The strap supply is hung over the working area and the sealing tool is not counterbalanced.

In this operation, strap and seal account for about 9-10c per pack with paper adding 2-3c. Two types of paper are under study, one a standard corrugated box material that gives a good cushioning effect and the other an asphalt impregnated kraft paper reinforced with glass fibers. This latter paper has good strength and is waterproof, which should result in good package stability.



How Texcrete Colors Their Clay Aggregate Block

Company solved problem of producing fast, completely absorbed, waterproof dye; now have ten colors in line

In view of the increasing interest in new industry products (as last month's Burns Block) we publish here an interesting method used by a Texas Haydite producer to color his output.

After a long period of experimentation in the development of colorful pastel dyes, specialized production techniques, etc., the TexCrete Company, Dallas, Texas, has built output on its "Holiday Hill Stone" light-weight unit to 60,000 square feet per 8-hour shift.

Sensational success has crowned the long period of "feeling the way" which TexCrete, a division of Texas Industries, invested in the light-weight field.

The firm's Dallas plant, in operation since 1947, had previously concentrated on Haydite and specialized concrete products, but made no effort to enter the light-weight aggregate product market until early 1954—although the product had been known in Texas for many years.

With a tremendous residential building boom altering the face of Dallas in the past five years, however, it was felt by Ralph Rogers, head of Texas Industries, that no riper time at which to introduce the product could be expected.

Consequently, TexCrete Company executives visited a small central Texas plant which had produced light-weight concrete unit on a small scale for several years, and complete arrangements to produce the product at the TexCrete plant a few miles west of Dallas.

Dyes Were Main Problem

The No. 1 problem in getting under production was the matter of dyes, according to C. E. Smith, plant supervisor. Previous attempts to produce a fast, completely absorbed and waterproof dye in the graded, sized and washed limestone aggregate used, had been something less than satisfactory.

However, with the market potential what it was, Texas Industries was encouraged to go ahead with an intensive program in its laboratories, located at the Dallas plant, toward the production of 10 standard colors. Eventually, dyes were worked out, in the form of natural pigments imported from Germany, which have completely solved the problem.

These natural mineral pigments, which vary tremendously in cost according to the color involved, underwent a period of several months of testing, under all types of construction, weather, and production situations, until a list of 10 dependable colors were evolved.

These include Persian Rose, Bermuda Pink, Sea Island White, Sandalwood, French Grey, Georgian Cream, Catalina Green, Hot Chocolate, Driftwood and Brazilian Cinnamon.

Heavy Advertising Campaign

To launch the new product in the Dallas market, a colorful advertising campaign was carried out, including color ads in local newspapers, direct mail to contractors, builders, potential home development agencies, and even realty firms. Other elements included the construction of a model home in Holiday Hill Stone, and the development of many "samples" which were distributed throughout the area.

Since then, production has developed swiftly through the evolution of practical production methods, to the point that 60,000 square feet of Holiday Hill Stone is being turned out in two shifts, and total sales for the first year rose from zero to more than 350,000 square feet.

Continued on next page

TEXCRETE COLOR Continued

While it was originally intended to produce both lengths on a par basis, it was soon found that despite palletizing, extreme care in shipping, and experiments with cartoning, etc., the 24″ length was overly prone to breakage, chipping and other damage. Consequently, production for the past six months has been almost entirely slanted at the 16″ scale.

Mechanically Handled

The Holiday Hill Stone, as produced by the two Besser units, is lifted by an overhead crane, then neatly deposited on an 8-tier rolling rack, which accommodates approximately 450 pieces. The pallet on which the wet aggregate brick is lifted, incidentally, is swung on a metal plate, held in place magnetically on the arms of the loader, so that after sliding the miniature pallet into place on the proper level, the operator presses a button which de-magnetizes the fork arms and allows him to swing them free for the next load.

The wet Holiday Hill Stone travels by fork-lift truck on pallets to the next step in the process, which is a series of 12 ovens, in two rows of six each, which face each other on opposite sides of a corridor leading from the right side of the production plant to the drying yard.

The caster-mounted steel racks are rolled easily into the ovens for a drying cycle of 8 hours at an average, although where possible, under lighter production schedules, the product is left in the ovens for 24 hours. A steam cure is utilized exclusively which is adequate to set the product thoroughly before moving into stacks, alongside the two Besser splitter machines.

The splitters are in continuous operation and have often gone a full 24 hour shift to keep pace with the heavy orders which have featured the past six months, according to Smith. After splitting, the brick is palletized in hacks of 450 and moved to the open drying yard for an indeterminate period, which usually exceeds a minimum of one month before shipment to contractors.

Have Five Superlites

As an idea of the many changes in production which have been necessitated, TexCrete recently ordered five Superlite unloaders which have proven the most practical and efficient way of transporting 450-piece hacks from the yard to the customer. "Holiday Hill Stone's weight is equivalent within a few percentage points of standard face brick," it was pointed out, "but is much more subject to damage in loading, unloading, and on the road. The Unloader, with its heavy carrying capacity and low personnel cost, has proven ideal for the purpose."

Variable Price Range

Pallet loads, in the interest of safety, have been restricted to 420 pieces 16x4x1⅝″ product.

Prices, due to the sharp variance in the cost of dyes, have required substantial study. Currently, prices are based directly on the amount of dye consumed in the manufacturing process, with dye quantities utilized ranging from a fraction of an ounce for one color to 60 pounds for another in individual batches. Consequently, the price range is pegged from $42 to $48 per thousand, comparing closely with face brick prices in the Dallas-Fort Worth area.

Use Two Bessers

The Holiday Hill Stone is formed in two Besser Vibra-Pac press machines, which are simply converted for other production through the switch from one type of form to another. The washed limestone is shipped from San Antonio, Texas, dumped from the hopper car into an underground hopper from whence it travels by conveyor to the second floor of the production building at the west end of the TexCrete Company's Haydite plant.

Mixing takes place at the overhead hopper, where dye and binder materials are added. For more than eight months, the dye was carefully measured out and mixed manually, but in recent months, a mechanical dispenser has been developed which does the job with greater precision.

Initial production was based on two basic block sizes, 8x16″ and 8x24″, each available in three thicknesses, ranging from 1⅝″ through 2½″ to 3⅝″. The block, after drying, is split on either of two Besser splitters, which provides a rough face which has been the No. 1 sales appeal of the product.

Promotion is continuing extensively, concentrated for the most part on architects, contractors, and to some extent, dealers. The pastel colors involved in the list of 10 hues, have lent themselves admirably to the long, low ranch-house silhouette which has sparkplugged Dallas building since the end of the war, and consequently, TexCrete is inclined to look upon every such dwelling as a "model home."

Along with steadily accelerating production of Holiday Hill Stone, TexCrete has developed a companion product which gives every evidence of a similar success. This is Tex-Tile, which consists of a fused tile surface on one side of a Haydite block.

Steam-cured in precisely the same manner, the tile surface is formed of the same graded limestone as the Holiday Hill Brick, and is furnished in the same 10 colors. An extremely smooth finish is made possible through the use of special forms which were developed by the laboratory, and vibrating the aggregate for an extended period of time which results in a surface of a flat finish, but readily comparable to that of the fired ceramic product.

In production since 1948, the low cost, easily-handled Haydite block and its tile surface has fitted into school building programs, with the result that 125 Texas elementary, junior high and high schools are featuring corridor wainscoting, lavatories, shower rooms, etc., of Tex-Tile.

Currently expanding in many directions, Texas Industries has created four organizations in the past two years, all located at the Dallas headquarters, which include Dallas Light-Weight Aggregate Co., Tex-Tile Co., TexCrete Co. and as the newest development, the TexCrete Structural Products Co. The latter is specializing in lightweight concrete aggregate "custom production" such as girders, pre-stressed walls, specialized forms and other "tailored-to-the-job" elements.

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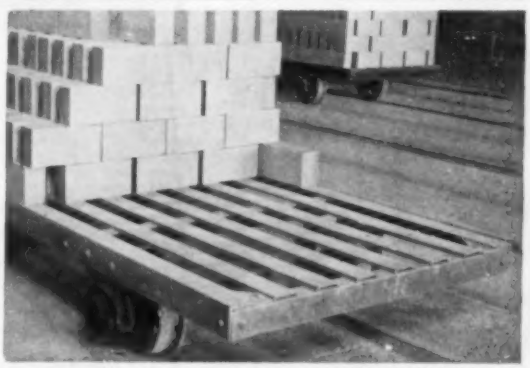

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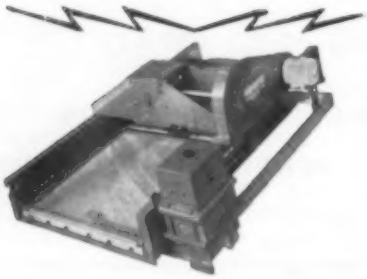

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Australian Tours Texas, Studies Color

"In Australia, Texas has the reputation of producing the most varied range of brick colors in the world. Our Australian architects are going wild on aluminum and glass and have told us brick-makers to produce more colors and textures. I've come overseas to learn what I could."

This is what Albert M. Walters, Glen Iris Brick Company of Melbourne, had to say as he and his wife made a tour of Texas brick plants. Walters came in search of chemical additives to impart color to his brick and found, to his amazement, that the wire range of colors produced comes from available clays. It seemed that his journey was wasted until he discovered ceramic glazed brick.

Australian clays will produce a deep red brick; some fire clay for white brick production and a mixture of two which yields a brown brick. This is the limit of color production. With growing architectural interest in color showing up as increased use of metal and glass Australian brick manufacturers are actively searching for an answer.

Moving?

If you're planning to move, remember to arrange for BRICK & CLAY RECORD to follow you. We need at least six weeks notice in advance of your moving date if you want to be sure to avoid missing an issue. Send your change of address to BRICK & CLAY RECORD, 5 South Wabash Ave., Chicago 3, Ill. Be sure to give both old and new address, zone number, and your name.

New Hommel Research Center Nearing Completion

The O. Hommel Company has announced that its new ultra-modern research center located directly across from the main offices in Carnegie, Pennsylvania, is nearing completion. This new building contains many modern innovations and will add over 20,000 square feet of research facilities for extensive ceramic research and development. With an extensive staff of trained and experienced personnel, the center will be one of the largest ever devoted to ceramic progress.

According to a report from Ernest Hommel, President, the new center wil contain an air-conditioned, dust-free, constant temperature instrument room. In addition to facilities for research in connection with Hommel's complete line of porcelain enamel and other ceramic materials, special provision has been made for both static and dynamic testing of high temperature ceramic coatings.

The construction of the building utilizes ceramic products throughout. Architectural porcelain enamel and glass along with mosaic tile augment the beauty of the exterior, while the interior design makes use of ceramic tile, brick, and porcelain enamel curtain walls.

Among the projects to be continued and undertaken in the new research center are: the development of better porcelain enamel finishes for household appliances, improvement of high temperature ceramic for aircraft and missiles, and research work in area lighting in conjunction with major electrical companies.

The new ultra-modern Hommel Research Center will augment the company's "Oscar Hommel Memorial Fellowship," now in its 25th year at the Mellon Institute in Pittsburgh. This fellowship for basic research in ceramic frits and chemicals was started by the late Oscar Hommel, company founder, in 1933.

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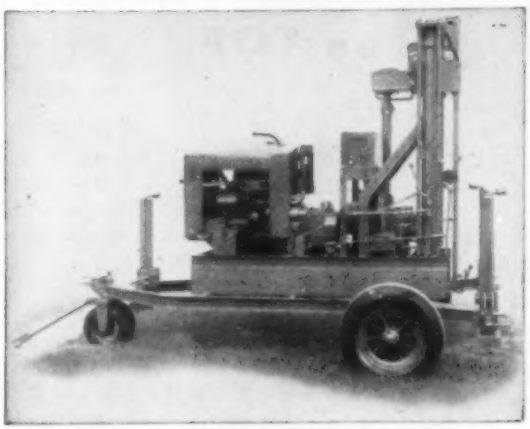

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Hydraulic Vertical Drill

- HEAVY DUTY
- FOUR SPEED AUGER
- FINGER TIP CONTROL
- 65 H. P. MOTOR
- ALL DRIVES MOUNTED ON TIMKEN ROLLER BEARINGS

RUGGED COMPACT EASY TO OPERATE

•

THREE LEVELING JACKS TO INSURE STRAIGHT HOLES. FIELD PROVED

Complete Information on Request

SPECIALISTS IN AUGER TYPE DRILLS

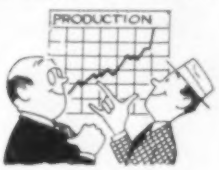
PARIS MANUFACTURING COMPANY

PARIS, ILLINOIS

May we come in?

Like to show you how to . . .

Cut labor costs . . .



and Increase production!

"The secret is in the use of modern materials handling equipment. And in the Brick Industry, when you speak of modern handling equipment, you're talking about . . ."

BICKERSTAFF BRICK FORKS

AUTOMATIC MODELS
Actuated by weight of load. 4x3 lifts minimum of 300 pounds.

HYDRAULIC MODELS
Gives full gripping pressure regardless of load weight.

- Experience proves labor to load and unload kiln reduced from 72 to 12 man-hours.
- Kiln turnover increased 25%.
- Loads directly from kiln to truck, freight car or inventory without rehandling.

WRITE TODAY FOR FREE DESCRIPTIVE BULLETIN

BICKERSTAFF, INC.

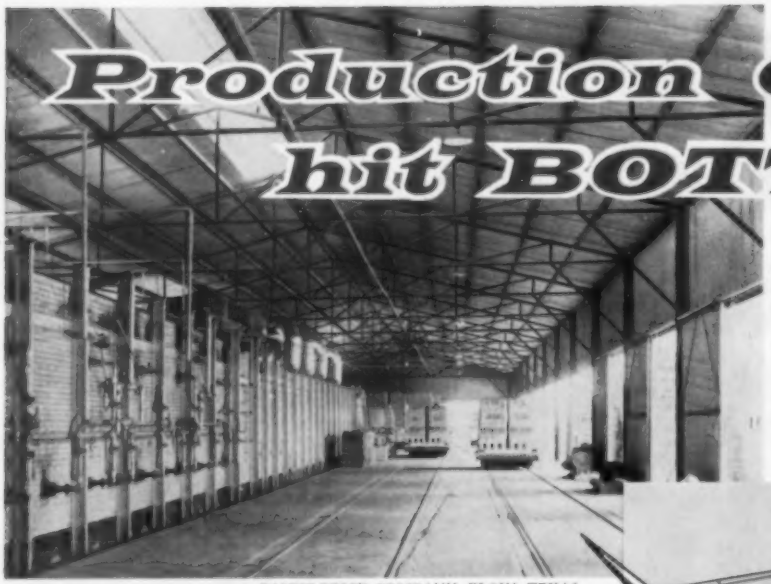
COLUMBUS, GEORGIA

Manufacturers and Designers of Materials Handling Equipment

•

REPRESENTATIVES THROUGHOUT THE U. S. AND CANADA
West Coast Representatives:
WALTER C. STOLL & SONS
5028 Alhambra Ave., Los Angeles 32, California

Production Costs hit BOTTOM . . .

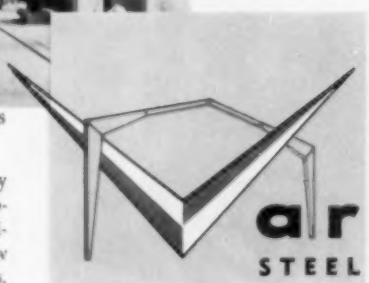


PAYNE BRICK COMPANY, ELGIN, TEXAS

When There's a Varco Building on TOP

A Varco steel building keeps production cost down by giving expensive equipment the kind of shelter and protection it must have in order to operate with lasting efficiency. It's good sense today. . . . It's good profit tomorrow to improve and modernize with low-cost Varco Buildings.

Varco . . . a name you can vouch for.



Varco STEEL BUILDINGS

R. G. VARNER STEEL PRODUCTS, INC.
P. O. BOX 781 • PINE BLUFF, ARKANSAS

BESSER Brickveyor

• The Besser Brickveyor is the modern way to position brick for the cubing operation. A brick cuber picks up 32 brick at a time and deposits them on Brickveyor in an upright position. Two variable speed belts automatically tip brick from vertical to horizontal position. Adjustable inclined gravity roller conveyor accumulates rows of brick for brick clamp handling at opposite end of Brickveyor. The brick clamp, interchangeable with block cubing clamp, assures fast, safe handling from Brickveyor to cube.

Brickmaking is profitable when you can make brick on a Vibrapac and cube them with the help of a Brickveyor. Handles up to 60,000 brick per day. Speeds up the job.

• Send for Bulletin No. 128 describing 4 ingenious ways of handling block or brick by power.

BESSER COMPANY • Complete Equipment for Concrete Block Plants • Alpena, Michigan, U. S. A.

A8-172½H

Mail Rates Went Up Aug. 1

Your cost of doing business must now include the following across-the-board postal rate increases which went into effect August 1:

	Old Rate	*New Rate*
FIRST CLASS		
Cards, each	3c	4c
Cards, each	2s	3c
Drop letters, per oz.	2c	3c
Business reply envelopes per oz., plus 2c	3c	4c
AIR MAIL		
Letters, per oz.	6c	7c
Cards, each	4c	5c
Business reply envelopes per oz., plus 2c	6c	7c
SECOND CLASS		
Transient second class		
first 2 oz.	2c	2c
additional 2 oz.	1c	2
additional 1 oz.		1c
THIRD CLASS (Individual piece, up to but not including 16 oz.)		
Merchandise, circulars, misc.		
first 2 oz.	2c	4c
additional 1 oz.	1c	1½c
Odd sizes, per piece	3c	6c
FOURTH CLASS		
Books, other than library		
first lb.	8c	9c
each additional lb.	4c	5c

Remember, too, that each letter your customer receives with insufficient postage, he will be requested to pay not only the postage due but an additional 5c penalty. Such mail refused will be returned to sender for the postage, plus the penalty. Exercise more care in mailing. Avoid creating ill-will. Eliminate this expense and speed deliveries.

BRICK & CLAY RECORD's subscription rates remain unchanged though it now costs more to deliver B&CR to you. Charges for magazines returned to address changes are higher, too.

If you are contemplating a change in address, insure against mail delays and help B&CR by notifying our Circulation Department immediately, giving date of change, old address, new address with zone number, if any.

Wessel Brick Sold For $40,000

Monroe and Elnora Wessel, owners of the Wessell Brick Yard at Huntersville, Ind., have sold the business to three men at a reported price of more than $40,000.

The new owners, from Morris, Ind., are Clifford and Aloys Doll and Victor Erhardt. Included in the sale is the 40 acre clay tract. The new name of the firm will be Hunterville Brick & Tile Corp. The new owners reportedly plan to add a second kiln.

536 Man-Years at Besser

A total of 536 man-years at Besser Co. is represented in this group of 16 Bessermen. Ranging from two youngsters with 20 years' service, employment time hits a top of 53 years' service. The occasion for this gathering was a farewell dinner for 75-year-old James Miller, in front row, center. Included in the group is vice president P. M. Park, back row center; purchasing agent Raymond Bailey, second from left, front row; John L. Sullivan, third from left, second row.

SAVE! ON FURNACE REPAIR REFRACTORY INSTALLATION

THE "CEMENT GUN"® METHOD

The CEMENT GUN is simple to operate; two or three of your own men can learn quickly and easily, after which they can make all your refractories repairs. With the CEMENT GUN they can place a lining 1" to 6" thick in one continuous operation. They can make patches in a "hot" furnace. They can place up to 5 thousand pounds of refractory material an hour. The CEMENT GUN method saves down time, saves material and extends the life of your present linings. Write today for our FREE bulletin No. 3000-B and check our claims.

Write for Bulletin No. 3000-B Today!

CEMENT GUN COMPANY "GUNITE"® CONTRACTORS

1520 Walnut St., Allentown, Pennsylvania

Clinker Brick Sells for $40.00 M For Colorado Springs Homes

The wisdom of "thinking twice before throwing away" was never better illustrated than the experience which National Clay Products Co., of Colorado Springs, Colo., has undergone, according to President Charles Welte.

As part of a recent trend toward masonry homes in the Colorado Springs area, several architects experimented with "weeping mortar," and found them extremely popular.

Welte, who had several stacks of clinker bricks in a background at National's plant immediately saw the possibilities of odd-shaped, rough clinkered brick, together with this style of mortar and successfully sold several architects on using it.

Resulting homes were immediately such a sensation that National Clay Products swiftly sold off its entire stock of clinker brick at $40.00 per thousand, and has been obtaining more from Summit Brick & Tile of Pueblo, Colo., with which National Clay has a working agreement.

"I wish that we had ten times as much clinker brick on hand today," Welte said. "Several homes built with clinker brick which would under normal circumstances have been crushed up for use on roads, etc., have won local architectural competitions and all of them have been constantly given editorial attention by Colorado Springs newspapers."

Ohio Lightweight Book Published

The latest bulletin from the Ohio State Engineering Experiment Station covers the lightweight aggregate field with sections devoted to the distribution of bloating clays suitable for the production of lightweight aggregate in Ohio, the mineral make up of typical bloating clays and the use of additives to promote expansion of otherwise non-bloating clays and shales.

The report outlines the area in the State of Ohio where shales and clays suitable for bloating occur. Altogether, samples representing 96 locations were tested to determine if they would bloat to produce material with a specific gravity of 1.5 or less. Of these 78 produced low densities and appeared to warrant further investigation.

The section on mineralogy of bloating clays and shales sets out the apparent mineral compositions of likely raw materials and sets limits on the gas forming minerals of the clay or shale that seem to control bloating.

The third section of the bulletin discusses the results secured when six different minerals were added to some typical non-bloating clays. It was determined that some clays react well with some of the additives to form dense products while other clays did not so react. The additives used were Calcite, Nepheline Syenite, Gypsum, Hematite, Pyrite, and Soda Ash.

Copies of the publication are available from the Engineering Experiment Station, Ohio State University, Columbus, Ohio for $2.00.

Ernest Fields, a ceramic engineer, has been appointed engineering representative by W. S. Dickey Clay Mfg. Co., working out of the company's Kansas City office.

THE PRIESTER TRUCK CRANE

(PATENTED)

16 units of 500 bricks each unloaded by driver alone, merely pushing buttons.

Unloads off either side. Puts loads on sidewalk where they belong. Requires less than half the unloading space that other devices need. Handles brick or block unpalleted or palleted or packaged. Not necessary to move truck. Unloads one, two or all units at one place! No chipping or breaking bottom bricks or blocks. Gentle handling. For full details, ask for Bulletin TC53.

BRADNEY MACHINE CO., INC.

Middletown, N. Y.

Four-Color Folder Produces Better Sales Results For Colorado Brick

Changing over from the standard mimeograph type of price list sent to building inspectors, architects, purchasing agents, etc., in favor of a four-color price list folder with many unusual features, produced more sales for Colorado Brick Co., with headquarters in Denver.

First, the four-page folder combines a russet brown, two shades of gray, black and red sections to attract more attention at a glance. The top feature of the cover is a "map" which details the area served by the four Colorado Brick Co. plants and offices, including the Valmont plant at Boulder, Colo.; the big Boulder plant, also of Boulder; the Longmont plant and business office of Longmont, Colo, and the sales office and display rooms in Denver.

Shows Stock Areas

The map, detailing the area serviced in Wyoming and Colorado, indicates key cities at which Colorado Brick products are stocked which, it has been found, created immediate interest among builders who are operating in suburban communities and who have taken advantage of the convenience of Colorado Brick locations.

Within, the price list gives telephone numbers and addresses for each of the plants and offices, lists prices per thousand for Safe brick, Normans, Romans, Nubricstone, SCR brick and two linings. Listed are a $5.00 delivery charge on deliveries less than 2,000 bricks or equivalent, cash discounts to contractors and builders, amounting to 12 different discounts, according to the type of product, the type of monthly account carried by the builder, etc. In listing prices across the page, an unusual efficiency step brought into the picture by Donald Gunning, plant executive, which is divided into "Colorado delivery zones" and "Wyoming delivery zones."

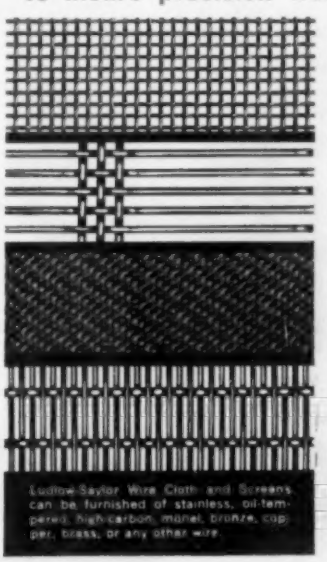
The key numbers, which run from 1 to 36 makes it easy for any customer ordering large quantities of brick to determine the exact freight and delivery cost without "leaving this blank" such as has often been the practice in brick delivery in the past.

For example, a contractor living in Eckley, Colorado, would look under "Schedule 16" for the delivery price of Colorado red, dark select brick, and find a price of $65 per thousand.

A contractor in a remote area of Wyoming, such as Little America on the northern Wyoming border, would simply check Schedule 6 for the same product, and find the delivery price to be $68.50.

This "schedule feature" has proven extremely popular with all brick purchases and has been responsible for a heavy increase in the remote-area market, reports Gunning — primarily because of far less uncertainty on prices to contend with. The folder, inside, became so popular immediately after publication that it was necessary to rerun another edition.

LUDLOW-SAYLOR makes its own wire crimping dies to insure precision weaving and dimensional stability


Ludlow-Saylor Wire Cloth and Screens can be furnished of stainless, oil-tempered, high-carbon, monel, bronze, copper, brass, or any other wire.

No guesswork here! To produce L-S crimping dies requires engineering knowledge of all physical and chemical characteristics of many kinds of wire, production know-how, skillful tool making plus critical supervision. Such careful methods are typical of Ludlow-Saylor manufacturing.
That is why L-S Wire Cloth and Screens are *the finest made for every sizing, straining, filtering operation*. They are tougher, stronger, more rigid—have better resistance to abrasion, distortion, vibration, heat and high pressure. Yet they cost no more than ordinary screens or cloth.

***Immediate Shipment** of most weaves and sizes*

Write for Condensed Screen Reference Catalog

Ludlow-Saylor
WIRE CLOTH CO.
604 S. Newstead Ave. • St. Louis 10, Mo.

SALES OFFICES: Birmingham, 1727-6th Ave. N.; Chicago, 5708 W. Diversey; Pittsburgh, Union Trust Bldg.; Houston, 5836 Harvey Wilson Drive; Denver, 1530 Carr St. WEST COAST SUBSIDIARY: Los Angeles, Star Wire Screen & Iron Wks., Inc., 2515 San Fernando Rd.

How to keep a

clean screen

when sizing sticky materials

LINK-BELT ALONE heats screens with a "series" arrangement requiring fewer cables, lower initial cost . . . providing less power loss, more even heating. Above, each of five "UP" screen cloths is connected to 12-kva transformer.

Electrically-heated cloth enables LINK-BELT "UP" vibrating screen to deliver its full capacity

HERE'S a screen delivering high-velocity action that's unsurpassed for fast, accurate sizing. And to guard that efficiency against blinding by sticky or hygroscopic fines, Link-Belt offers a superior electric screen-heating arrangement. Among its advantages:

GREATER OUTPUT. Open mesh may boost capacity as much as 50%. Downtime for cloth cleaning and replacement is eliminated.

BETTER, MORE UNIFORM PRODUCT. Clear cloth provides more accurate sizing.

LONGER CLOTH LIFE. No whipping due to material accumulation.

LABOR SAVINGS. Ends mechanical cleaning.

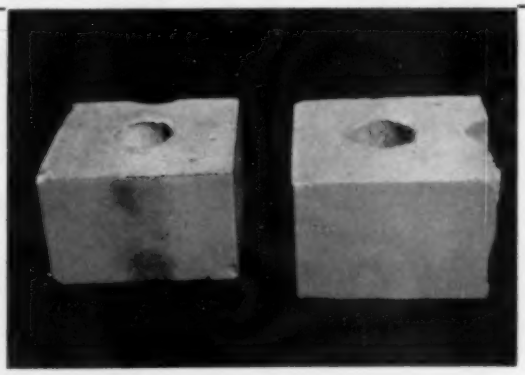
Write for Book 2377-A—full data on "UP" screens. Your Link-Belt office has facts on the heating feature.

LINK-BELT

VIBRATING SCREENS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14.928

CONTROL GREEN SCUM with MINERVA FLUORSPAR



A little green scum can ruin a fine reputation. Here is an example of a beautiful light cream brick, fired at Cone #1 and with a 10% absorption.

In the case on the half brick at the left, no fluorspar was added and green scum developed after less than a month of outdoor exposure.

The half brick at the right was produced in the same way from the same materials, but with 25 lbs. of fluorspar added per ton of clay, or slightly more than 1%. The cost of the fluorspar additive was less than 50 cents per ton of clay.

MINERVA Ceramic Fluorspars are the recognized remedy for combatting vanadium green scum in buff, cream, pastel and white brick. It is particularly needed where delicate color control makes hard firing and resulting vitrification objectionable.

Fluorspar, when finely ground and thoroughly mixed with the clay at the dry-pan, acts as a flux at low temperatures, vitrifying the interior of the brick. Since green scum is caused by the oxidation of soluble salts of vanadium and iron, which have migrated from inside of a porous brick, upon alternate wetting and drying, the decrease in permeability through vitrification prevents these troublesome salts from being carried to the surface of the brick.

Ask for a trial sample of MINERVA FLUORSPAR to try on your own ware. MINERVA'S clay-consulting engineer is at your service on green scumming problems at no charge.

MINERVA OIL COMPANY

Fluorspar Division

Box 531

ELDORADO, ILLINOIS

deck transfer car, are at the moment installing a new kiln floor using Lumnite concrete mix.

Welcome to Sacramento!

Lyman W. Lacy, Gen. Mgr.
Cannon & Co.
Sacramento, California.

Ed. Note: We'd be glad to come to California in February when we make our annual tours of a brick producing state. We've also suggested to our higher ups that Florida and Hawaii would be good areas. Unfortunately, our higher ups seem to prefer more northly states in the Winter. We're trying, Mr. Lacy.

June Boom

Editor, BRICK & CLAY RECORD—

After reading your June issue . . . I would like to congratulate you on a swell job, particularly the section entitled, "Build Before The Boom."

I was also impressed with the broader coverage of the entire Clay Industry and particularly with your tremendous growth in pages of advertising.

Despite the increase in your advertising space, you have been able to maintain excellent visibility for all ads.

Norman Malone
Norman Malone Assoc., Inc.
Akron, Ohio

Case Announces 75% Sales Increase in Half

Sales and earnings for the J. I. Case Co., Racine, Wis., in the second quarter of the 1958 fiscal year showed one of the highest rates of increase in company history, according to Pres. Marc Rojtman.

Sales for the second quarter were $54 million, compared with $26 million for the same period, 1957. Earnings before taxes in 1958 were $4.8 million, compared with last year's $125,000.

Sales for the first half, 1958, amounted to $75 million, compared with $42 million in the 1957 first half, an increase of 75%.

Robinson Clay Award To Harpley

Theodore R. Harpley, of Cuyahoga Falls, Ohio, is the 1958 recipient of the Robinson Engineering Award, made annually to the outstanding senior in the University of Akron College of Engineering by the Robinson Clay Product Co., Akron. Robinson president W. E. Robinson made the award.

Johnson Named Chambers Sales Engineer

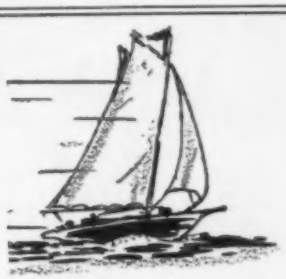
Ellis T. Johnson Jr., formerly with Link-Belt Co. and Mechanical Handling Systems, Inc., has been named sales engineer with Chambers Bros. Co. of Philadelphia.

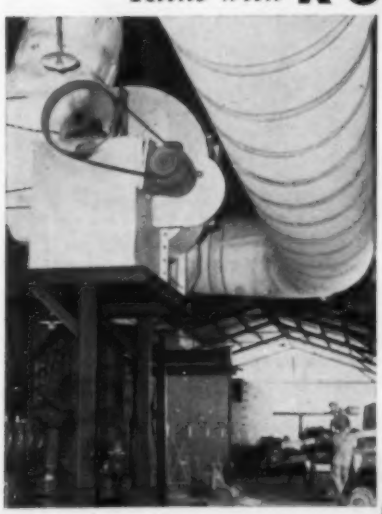
He will represent Chambers for its full line of machinery to plants in both structural clay products and refractories.

Chambers also has announced appointment of Richard A. Conway as office manager in charge of all matters pertaining to the sale and supply of replacement parts. He replaces Frank Windolph, who retired after 56 years with Chambers.

Smooth Air Handling

means Better Production from Tunnel Kilns with **ROBINSON** *Fans*





ROBINSON FANS are engineered to meet exacting demands for accurate performance of tunnel kilns.

Complete Groups of Robinson Engineered Fans, built especially for Tunnel Kiln Application, are serving a constantly growing list of successful installations.

For your new tunnel kiln — or if you are revamping your present kiln — it will pay you to specify Robinson Fan Equipment.

When you buy Robinson Fans for your Tunnel Kiln from your Tunnel Kiln Builder, you can be sure they will be accurately engineered and backed by our standard guarantee as to quality, workmanship, and performance to specification.

WRITE, WIRE, OR JUST CALL FOR MORE INFORMATION!

SEE OUR CATALOG 91 Ceramic data book Page 283

Robinson type AE-6-BB Exhaust Fan Serving a Kiln

STRENGTH and QUALITY

ROBINSON VENTILATING COMPANY

ZELIENOPLE, PENNSYLVANIA

1. Eliminates **FIRE HAZARDS**
2. Will not **STRIP** or **TEAR**

NEW FIREPROOF # SCANDURA

The original P.V.C. coated *Conveyor* **BELTING**

When the belt stops and the driving drum doesn't — there is danger of fire — but NOT if you use new SCANDURA P.V.C. coated conveyor belting.

Developed and tested by our parent company in the United Kingdom since 1946, SCANDURA is now made in our Charlotte, N. C. plant. Here is a belt that absorbs terrific impact with minimum abrasion. Write for free catalogue showing how you can use SCANDURA to advantage in your industry.

We also produce DEPENDABLE, LONG-LASTING and ECONOMICAL

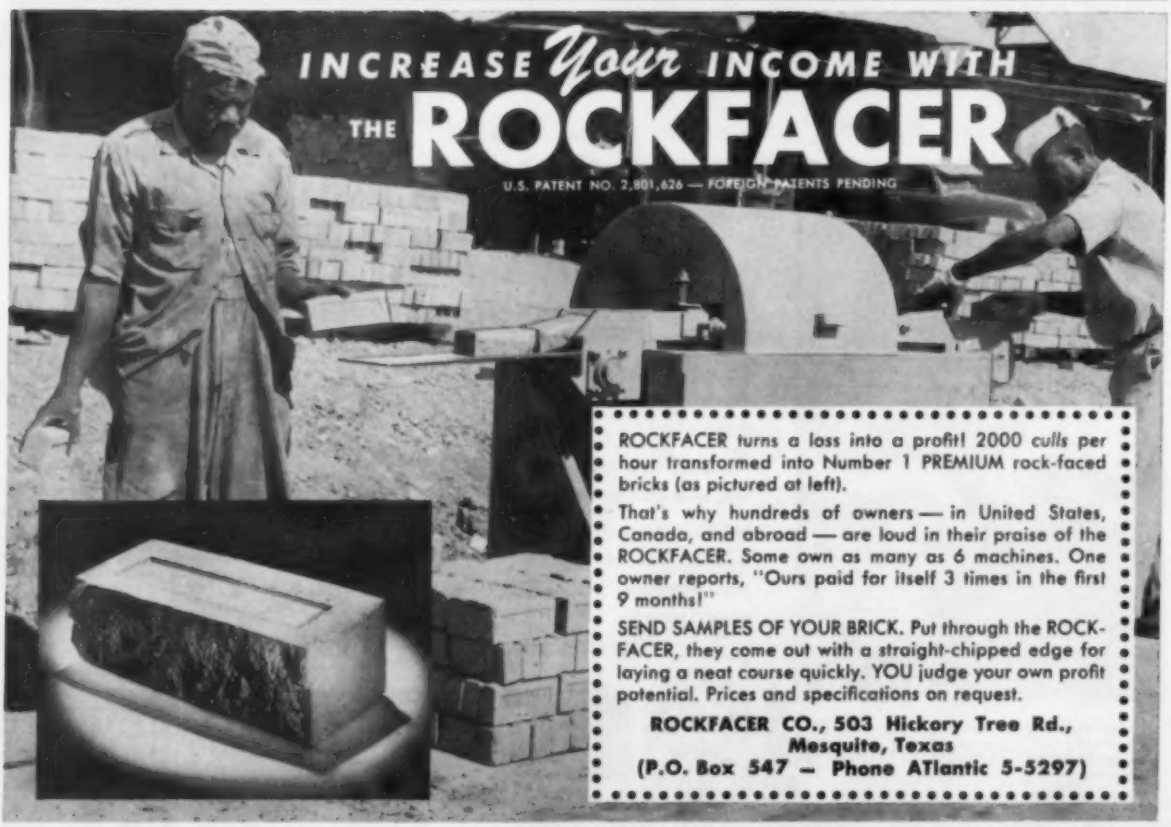
SCANDINAVIA & FENTONIA
for conveyor belting

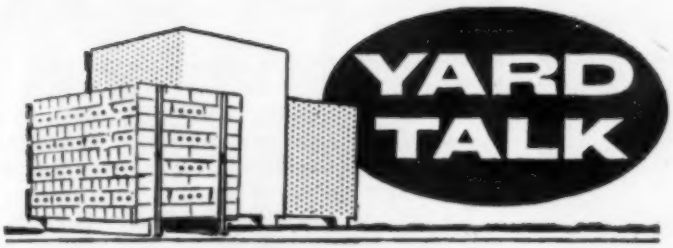
•

SCANDILEX & SCANDINAVIA
for transmission belting.

•

SCANDINAVIA BELTING COMPANY
250 CENTRAL AVENUE, NEWARK 1, N. J.
BOSTON • **PLANT: CHARLOTTE 1, N. C.** • CLEVELAND


INCREASE Your INCOME WITH
THE ROCKFACER
U.S. PATENT NO. 2,801,626 — FOREIGN PATENTS PENDING
ROCKFACER turns a loss into a profit! 2000 culls per hour transformed into Number 1 PREMIUM rock-faced bricks (as pictured at left).
That's why hundreds of owners — in United States, Canada, and abroad — are loud in their praise of the ROCKFACER. Some own as many as 6 machines. One owner reports, "Ours paid for itself 3 times in the first 9 months!"
SEND SAMPLES OF YOUR BRICK. Put through the ROCKFACER, they come out with a straight-chipped edge for laying a neat course quickly. YOU judge your own profit potential. Prices and specifications on request.
ROCKFACER CO., 503 Hickory Tree Rd., Mesquite, Texas
(P.O. Box 547 — Phone ATlantic 5-5297)



Here's some short personal items: Walter Colley, secretary-treasurer of Pacific Clay Products, has been elected to membership in the Controllers Institute of America . . . A. P. Green Fire Brick has announced that George W. Paul has won the annual Green scholarship award . . . Subchairman of the program in charge of clay minerals and bloating shales for Mid-America Minerals Conference is Dr. Arthur White, of the University of Illinois Ceramic Dept.; conference will be held Oct. 23-25 at the Chase-Park Plaza hotels in St. Louis. At the same conference, Dr. Tom Beveridge of the Mo. State Geological Survey will give a paper in industrial minerals of Missouri, including clays and refractory materials.

Continuing with personal notes, Al Barnes of Gladding, McBean & Co. has been added to the roster of the Executive Reserve of the Federal government. This reserve, a group of trained industry men on call for service in time of emergency, also has included John Stewart of Stark Ceramics. There are only 652 men in the entire country in the reserve, so it's an honor for both.

Gov. J. Hugo Aronson recently visited Western Clay Mfg. Co., west of Helena, Mont.; the Montana governor enjoyed reminiscing about his days, back in 1913, when he worked in a Van Meter, Ia., brickyard, pushing a wheelbarrow. He was reported to be very impressed by the plant mechanization and modernization since his time.

Clay products plants in Fulton, Mo., have been involved in a clay truck tax situation. Since clay products is a large part of town business, and since the heavy clay trucks are reported to be increasing wear and tear on the streets, a local committee recommended in April that the city set up scales for the trucks and require a fee for the service. Money from this would be used to maintain the streets that the trucks use most often. We haven't heard how this came out, but it's something that other clay-product-town plants might watch.

Gem Clay Forming Co. has put out a nice folder on their products. The Sebring, Ohio firm lists most of their products in the book with particular emphasis on the Gem combustion chambers.

Not about a clay product man directly, but we'd like to note a nice story in the Little Rock (Ark.) Gazette about a brick industry supplier. Bob Varner, head of R. G. Varner Steel Products Co., is reported to be doing very well, going from a more-or-less one man business to 45 employees in a short time. First job that Bob did in our industry was at Holly Springs, Miss.; since then he's done many and has wound up doing almost solely work with the clay products industry. His largest job was a 140x920' building for Columbia (S. C.) Brick & Tile, a plant we recently featured. Bob's working on an idea to build a rigid-steel frame house in Pine Bluff . . . with brick veneer.

Oak Hill Appoints Davis, Giberson

Myron E. Davis and Philip E. Giberson will serve as, respectively, general manager and sales manager for Oak Hill (Ohio) Fire Brick Co.

They were named by the company board of directors to replace A. C. Judd who recently died and who held both positions.

4 BIG REASONS
serve industry best
1 • ELIMINATE BLINDING
2 • INCREASE TONNAGE
3 • BUILD GREATER PROFITS
4 • SPEED PRODUCTION
Hanco
ELECTRIC SCREEN HEATERS
PIONEERS IN ELECTRIC SCREEN HEATING
F. R. HANNON & SONS
Hanco
1605 Waynesburg Rd. S.E., Canton 7, Ohio

Delivering Fork Truck To Site Pays Off For Wallapai Brick

Towing a fork truck to customers' job sites to unload and spot packaged brick wherever the customer wants it is an extra service that pays off in substantial repeat business for Wallapai Brick & Clay Products, Inc., Phoenix, Ariz.

When a delivery truck leaves Wallapai's yard, a 2000 lb. capacity "Clarklift" fork truck is towed along behind it on a four-wheel trailer. At the job site the truck driver operates the fork truck to unload brick and set it wherever is convenient for bricklayers. Average unloading time for 4800 bricks is 15 minutes.

For fork truck handling bricks are packaged in cubes, with openings left for fork insertion. Cubes are secured with steel strapping.

Real Labor Saver

Under the previous method of hand unloading, six delivery trucks, each manned by two men, made a total of 30 trips a day. Now two trucks, with one man each, deliver the same number of brick in 17 trips.

While the fork truck system has produced labor and equipment savings for Wallapai, the biggest benefit, according to M. H. Harvey, vice president, has been in faster customer service and elimination of the hand work required by the customer at the job site.

The two Clark fork trucks Wallapai uses are pneumatic-tired models designed for operation in the mud and rough terrain frequently encountered at job sites. They've been towed as far as 65 miles to unload brick.

NEED A SOURCE OF SUPPLY FOR DRY-PRESS & RE-PRESS OUTFITS?

Typical units made in our dry-press & repress outfits

We Design & Build Outfits for Dry Pressing & Stiff-Mud Re-Pressing.

***Special Shapes *Structural Facing Tile**
***Rotary Kiln & Cupola Blocks**

Your Inquiries Welcomed!

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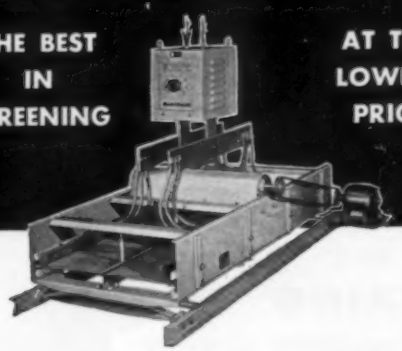

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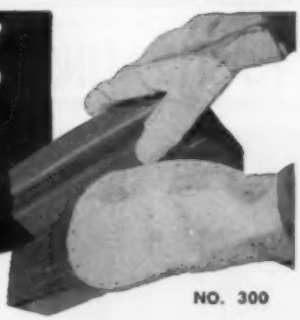

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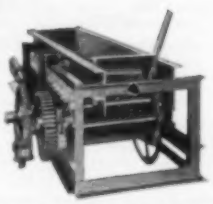

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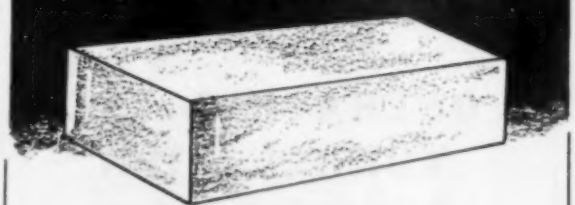

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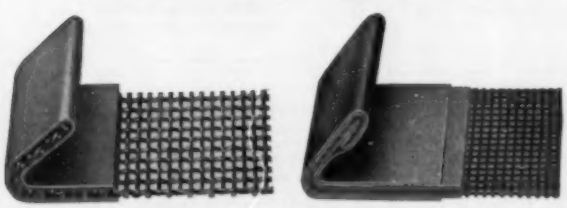

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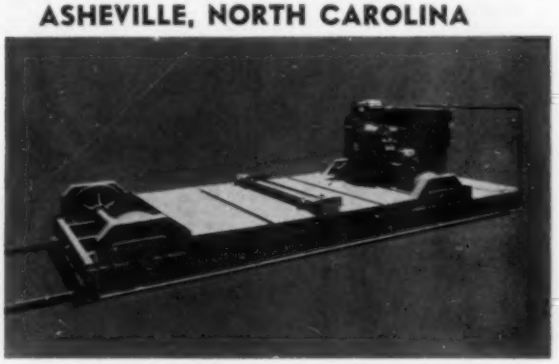

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Sometimes it is a problem to get adequate pugging and tempering of clay so as to eliminate the need for wet pans, and to feed this clay under vacuum into the totally enclosed chamber of a vertical steam or hydraulic Sewer Pipe Press. The photograph below shows one of several variations we offer which make use of two basic units.

The No. 50F Pug Sealer is actually the "upper half" of our famous No. 50 Separate Drive Deairing Machine which has been built for almost twenty-five years as Models A through F. The Model F offers 11'-4" of open pugmill 30" ID, and adjustable pitch knives allow maximum pugging for tonnages as low as 5-6/hr. or as high as 40T/hr. The clutch may be manual but a pneumatic clutch electrically actuated allows synchronization with some system of even clay-feed and with a carefully regulated high pressure water spray system for a most gratifyingly narrow tempering range. Under normal circumstances this Pug Sealer would operate on a continuous basis.

The lower unit is the Intermittent Pipe Press Feeder which obviously can be mounted at either of two right angles or "in line" with the Pug Sealer. When fitted with clamp-hub type split high-pitch augers as shown it will accumulate shredded clay from the Pug Sealer between cycles of the Press, and then will quickly discharge the clay under the "mud-head" of the Press when it is in the "up" position as the pneumatic clutch is electrically (and automatically) operated.

When the IPPFA and the Pug Sealer can be mounted "in line," and when the design of the Press is such that clay can be fed continuously whether the mud-head is up or down, we can combine these two units into a simplified form known as the No. 50F Pipe Press Feeder-Sealer in which the IPPFA is driven from the master gear of the Pug Sealer. In that case there is only one drive and clutch and the units cannot be operated separately. Naturally the augers in the IPPFA would be replaced by clamp-hub split single-end knives for continuous discharge of clay and maximum pugging under vacuum. This unit arrangement is quite similar to any standard combined-type deairing machine which may be used for this purpose except that the pugmill volume is far larger than any but the largest combined machines; the weight of the whole is considerably less; and the main emphasis of the drive is on the pugging shaft where it belongs instead of on the lower or "auger" shaft. For these last two reasons the price is considerably lower.

We have other variations—such as the addition of a Vacuum Pugmill where desirable. Write us about your Press deairing problems.

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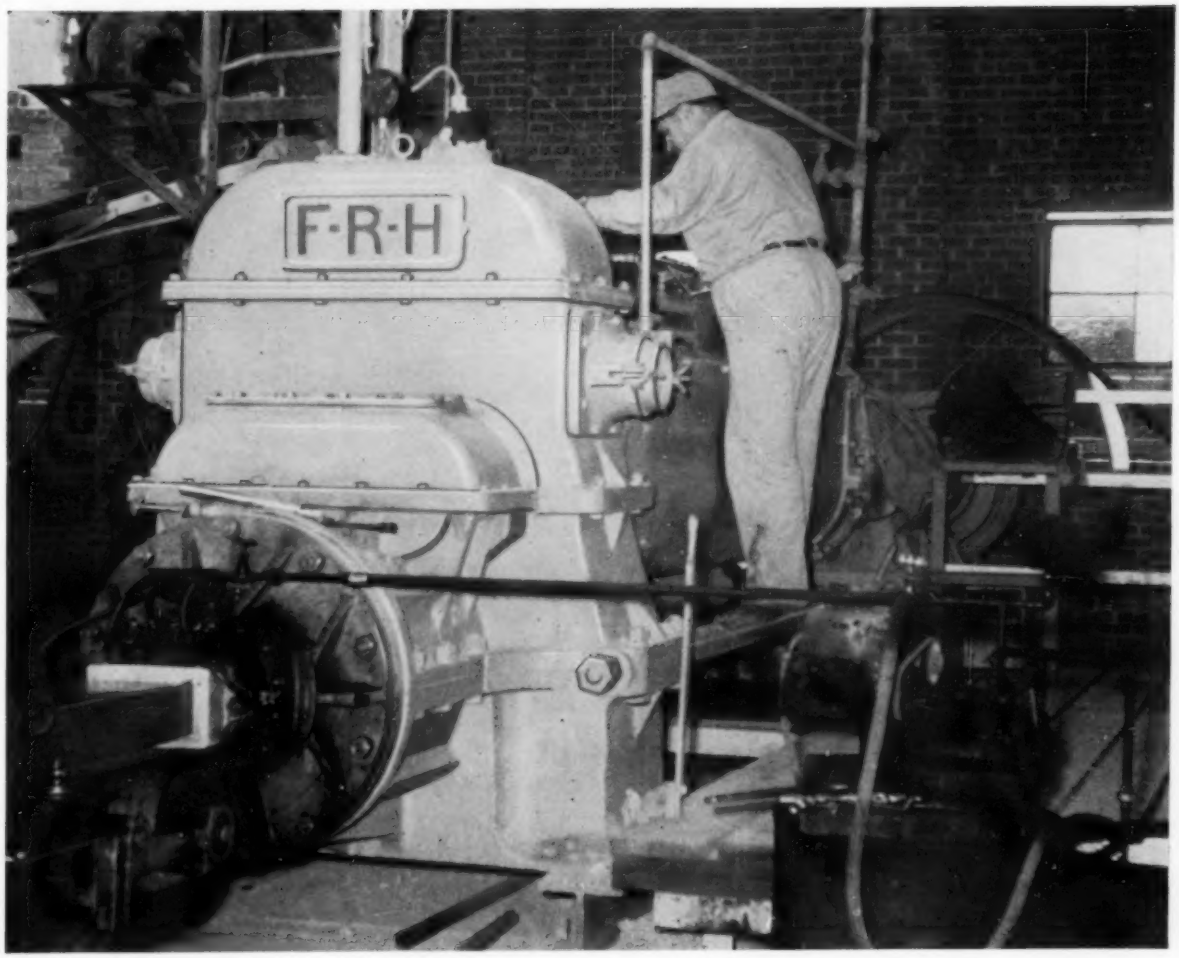

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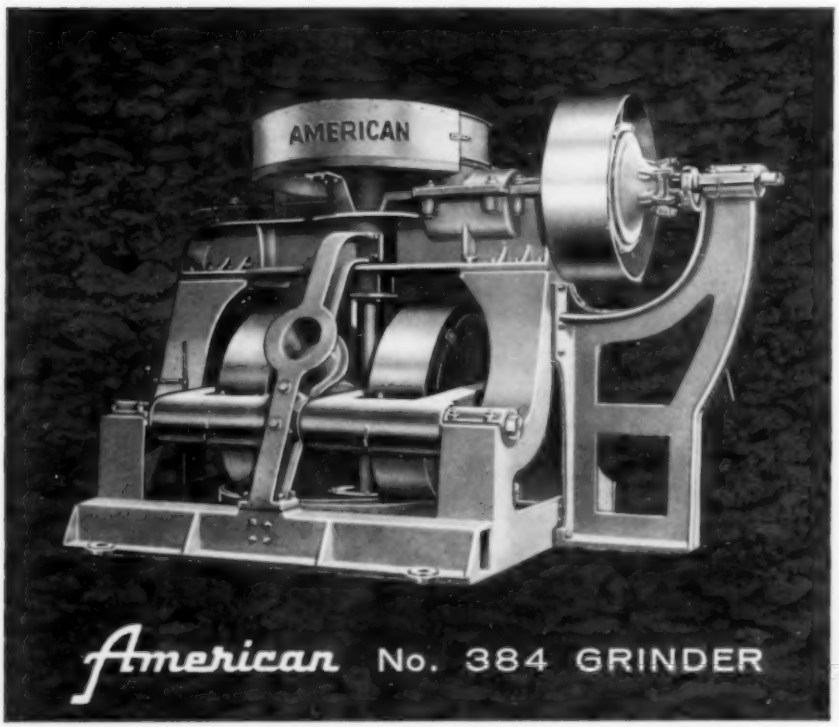

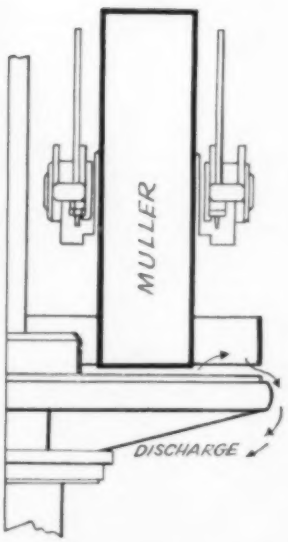

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